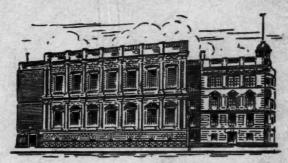


# JOURNAL



# Royal United Service Institution

WHITEHALL, LONDON, S.W. 1

ALL RIGHTS RESERVED PUBLISHED QUARTERLY

Ince Seven Shillings and Sixpence

Sole Advertising Contractors:
Gale & Polden, Ltd., 2, Amen Corner, E.C.4. Telephone: Central 0397.

"The first number certainly sets a high standard both in matter and make-up."—The Times, January 8th 1930

# The ROYAL AIR FORCE QUARTERLY

(Embodying also the Dominion Air Forces) Published January, April, July, October

### Edited by

Squadron/Leader C. G. Burge, O.B.E., A.R.Ae.S.I., (Retd.)

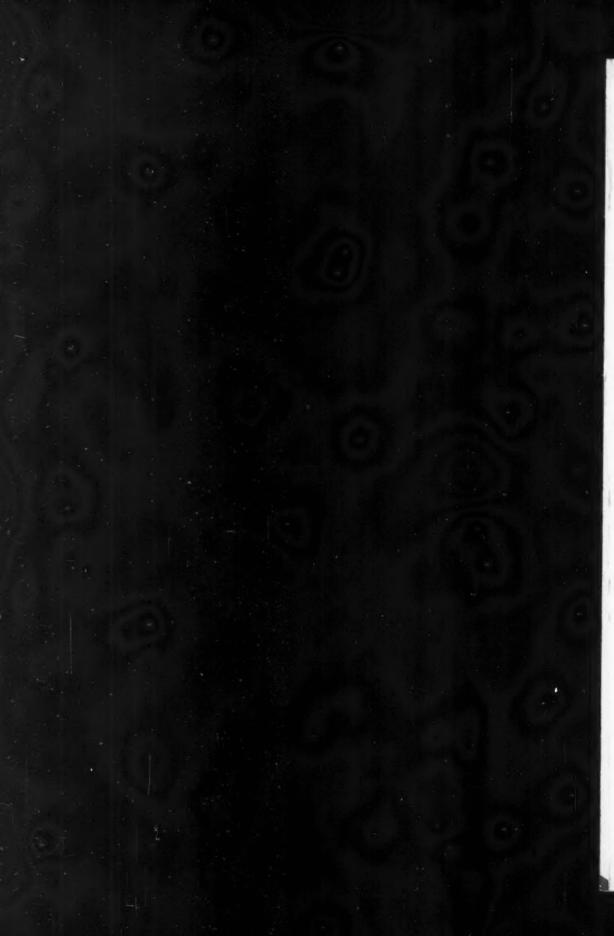
Assisted by an Advisory Committee of Officers and Ex-Officers of the Royal Air Force and Dominion Air Forces Each issue contains articles on a wide range of subjects and of interest and professional value to Officers of all three Services. Articles from Officers of the Royal Navy and the Army will be welcomed

Published by

# GALE & POLDEN LTD.

Price 5/6 (per post 5/6) Yearly Subscription 22/6 post free. Obtainable through any Bookseller or Newsagent, or direct from the Publishers.





# THOROUGH AND UP-TO-DATE POSTAL INSTRUCTION is provided in

all obligatory and several optional subjects

### STAFF COLLEGE ENTRANCE EXAMINATION

and in all subjects

for PROMOTION EXAMINATIONS

by

### PITMAN'S CORRESPONDENCE COLLEGE

293, SOUTHAMPTON ROW, LONDON, W.C.1

### CONTENTS FOR FEBRUARY, 1931.

	PAGE
Secretary's Notes	j.
FRONTISPIECE: "THE GWAJHA PASS"	_
THE NORTH WEST FRONTIER OF INDIA. By LIEUTENANT-GENERAL SIR	
GEORGE MACMUNN, K.C.B., K.C.S.I., D.S.O	I
EIGHT YEARS OF BRITISH CONTROL IN IRAQ. By "JUNDI"	10
REGIONAL CONTROL AND THE CO-ORDINATION OF AIR AND LAND FORCES.	
By Major R. H. L. Fink, O.B.E., M.C., The Royal Scots	18
PRACTICAL SECURITY. By REAR-ADMIRAL W. A. EGERTON, C.M.G	27
THE ARMY AS A CAREER. (Lecture). By LIEUTENANT-COLONEL G. McM.	
ROBERTSON, D.S.O., p.s.c	37
THE JUNIOR DIVISION OF THE OFFICERS' TRAINING CORPS: A SURVEY.	
By a Contingent Commander	55
POWER FUEL FOR THE SERVICES. (Lecture). By J. S. S. BRAME, Esq.,	
C.B.E., F.I.C., F.C.S	64
THE DEFENCE OF PORTS. By LIEUTENANT-COMMANDER J. D. PRENTICE,	
R.N	82
THE WORK OF THE ROYAL AIR FORCE AT ADEN. (Lecture). By SQUADRON-	
LEADER THE HON. R. A. COCHRANE, A.F.C., R.A.F., p.s.a	88
PLATE I. AN AIR ATTACK ON DALA FORT facing page	102
PLATE 2. H.M. CHINA GUNBOATS facing page	103
THE WORK OF OUR CHINA GUNBOATS. (Lecture). By VICE-ADMIRAL	
H. J. Tweedie, C.B	103
COMMUNISM ON THE YANGTSE	117
THE DEVELOPMENT OF COMMUNICATION AND COMMAND. By CAPTAIN	,
F. S. Morgan, Royal Signals (S.R.)	128

Continued on page 3.

# OVERSEAS SETTLEMENT

OFFICERS OF THE FORCES wishing on retires ment to settle in the Dominions or Colonies, are offered the free and voluntary service of the

OVERSEAS LEAGUE MIGRATION BUREAU,

4, Park Place, St. James' Street, London, S.W.1



BY ROYAL WARRANTS

1838-1885



1901-1911

By Appointment
PURVEYORS OF WINE TO HIS MAJESTY THE KING
February, 1911

# JOHN DOBELL & CO.

LIMITED

### Wine and Spirit Merchants

### SHERRY

Sandeman's Full Pale 58/- per dozen Misa's Fine Dry Pale 60/- per dozen

### WHITE WINE

Podensac 27/- per dozen Château Bouchoc St. Croix du Mont 39/- per dozen

### PORT

Dobell's Lunch Port 54/- per dozen Cockburn's FineTawny 69/- per dozen

### Sample Case

Containing One Bottle of each of the above 25/-

HE average householder, whether he belongs to the Services or not, who gives his friends a small dinner or luncheon party on occasion, is genera ally content with Sherry, some White Wine, and a few glasses of Port to finish up with. Also he is, as a rule, not prepared to pay a high price for his Wines, and, possibly, disinclined to order more than a few bottles at a time. But because of this there is NO REASON WHATSOEVER why a good old established firm of Wine Merchants should not be dealt with, Wine Merchants who take a pride in laying down, maturing, and preserving their wines, so that you may drink them in perfect condition. Our firm have nearly a Century's Experience of the Wine trade. In the light of that experience we recommend the wines quoted here.

Our enormous stocks of wine, some of which have lain undisturbed in our cellars for over 60 years, include White Wines from 19/-; Clarets from 19/-; Ports from 42/-; Sherries from 36/-; and we have a carefully selected variety of Empire Wines from 25/- a dozen.

### Full Price Lists on Application

CARRIAGE PAID BY GOODS TRAIN ON ALL ORDERS FOR SIX BOTTLES OR OVER.

### 246 HIGH STREET, CHELTENHAM

and at

NEWPORT, TEWKESBURY, UPTON-ON-SEVERN & GLOUCESTER

### FOUNDED 1887

# THE SECRETARIAL AND BUSINESS TRAINING COLLEGE

DAY, RESIDENTIAL AND POSTAL

Prospectus, giving standard of qualification for the Diploma, which guarantees an appointment on completion of training, post free from Mr. B. J. Munford,

KENSINGTON COLLEGE, Paddington, London, W. 2

### CONTENTS—continued from page 1.

										PAGE
THE CLOSE SUPP	ORT O	F INFAN	TRY.	By M	AJOR C.	T. BE	CKETT,	M.C.,	R.A.	137
INSTRUCTION BY	TALK	ING FIL	MS. B	y Ma	JOR E. I	R. MA	CPHERS	SON, C	B.E.	145
VERDUN AND SO	MME.	By Br	IGADIE	R-GEN	ERAL SI	R J. E	EDM	ONDS,	C.B.,	
C.M.G						-				150
ATHLETIC TESTS										
Sherwood F										154
MARTIAL LAW.										157
THE INTERNATION				474.41	.,					-31
				OP F	. W. F	OTEON	New	MAN	BΔ	
		DAI, I							19.21.,	160
							• •			
GERMAN								* *		165
FRANCE	AND	SECURI	TY							166
GREAT !	Brita	IN'S IN	TERNAT	IONAL	OBLIGA	TIONS				166
THE LO	NDON	NAVAL	TREAT	Υ						172
IRAQ:	Гне Е	BAGHDAI	D-HAIFA	RAI	LWAY					173
Persia:	THE	TRANS	-PERSIA	N RA	ILWAY					174
CORRESPONDENCE										175
GENERAL SERVIC		TES								180
NAVY NOTES										183
ARMY NOTES										194
										205
AIRSHIP NOTES			* *			* *				212
Reviews of Boo	OKS									215
ADDITIONS TO TH	T. T. 11	RDARV								220

### Preparatory School for 35 Boys (7½ to 14)

# Red House, Marston Moor, York

Headmaster (since 1922), Lieut.-Colonel E. N. MOZLEY, D.S.O., R.E. (Ret.)

### SPECIAL TERMS TO OFFICERS

Six Public School Scholarships gained since March, 1925 including two "Firsts" and one "Second," In Advanced Mathematics Five were First and One was Second.

Excellent Health Record. School Farm and Extensive Grounds. Riding is a notable feature of school life, together with other special outdoor interests. Many references can be given to officers whose sons have been at Red House.

Prospectus on application.



# The ideal beverage. Brewed from finest Malt and Hops only. For Samples and Terms apply to :— ZUID HOLLANDSCHE BIERBROUWERY (LONDON) LTD. 20:21 ST. DUNSTAN'S HILL, LONDON, E.C.3 Telegrams: Cyprides, Bilgate, London. Telephone: Royal 6631.

Specialists in the Production of

### MILITARY HISTORIES WAR DIARIES

and all

Naval and Military Requirements

Consult

GALE & POLDEN, LTD. 2 AMEN CORNER, LONDON, E.C.4

### 199 CLUB

To those requiring a Club with the atmosphere of a private house in the best position in Kensington, overlooking gardens, this club will be sure to appeal.

Residential terms from £3 3s. Bridge daily from 3 to 12. Subscription to non-resident members £2 2s. per an. Lessons and Practice Classes.

199, QUEEN'S GATE, S.W.7 Phone Kensington 6767. Carage accommodation



# TO INVESTORS IN DOLLAR

The United States Federal Government have-by joint resolution of Congress-made reductions in the rates of Income Tax.

Particulars of these reductions may be had on application to:— Box No. 28

### THE

### NATIONAL CITY COMPANY

Incorporated in the United States of America with Limited Liability.

Investment Affiliate of The National City Bank of New York.

34 BISHOPSGATE, LONDON, E.C.2 11 WATERLOO PLACE, LONDON, S.W.1

Manchester Representative; Royal Mail House, 76 Cross Street.

A Great Work with a Great Object.

THE

## **SHAFTESBURY HOMES**

AND

### 'ARETHUSA' TRAINING SHIP

10,000 Boys have been sent to the Royal Navy and Mercantile Marine.

Eight old "Arethusa" boys were in H.M.S. "Vindictive" in the attack on Zeebrugge on St. George's Day, 1918. One received the V.C. and the others received the D.S.M.

1.100 Children are always being maintained.

# FUNDS URGENTLY NEEDED

to prevent curtailment of any Branch of the Society's Work.

Work.

Patrons; Their Majesties the King and Queen; H.R.H. Princess Mary, Countess of Harewood; Field-Marshal H.R.H. the Duke of Connaught. President; H.R.H. the Prince of Wales, K.G. Chairman and Treasurer; Francis H. Clayton, Esq. Deputy Chairman; Lord Daryngton. Chairman "Arethusa" Committee; Howson F. Devitt, Esq. Secretary; F. Brian Pelly, A.F.C.



Training Ship

164 SHAFTESBURY AVENUE, LONDON, W.C.2

The Society pleads for Legacies and Bequests.

### ARMY PROMOTION EXAMS.

[Subjects (a), (b), (c) and (d)] and

# STAFF COLLEGE ENTRANCE EXAMS.

(Camberley & Quetta)

No matter where you are stationed, the Metropolitan Services College can be of the greatest possible assistance to you in your preparation.

-OVER-

# 4,700 RECENT SUCCESSES & 6 SPECIAL CERTIFICATES

Write TO-DAY for a copy of the College latest Prospectus, "The Army Promotion & Staff College Entrance Examinations," to Dept. M.4,

METROPOLITAN SERVICES COLLEGE, ST. ALBANS

SPECIMEN COPIES ON REQUEST TO CLUBS, MESSES, Etc.





PUBLISHED QUARTERLY: JANUARY, APRIL, JULY, OCTOBER.



The

# FIGHTING FORCES

A QUARTERLY MAGAZINE for THE ROYAL NAVY THE ARMY and THE ROYAL AIR FORCE

Editor: Lieut, Col. R. M. RAYNSFORD, D.S.O.

SERVICE NOTES and ARTICLES, SPORT, TRAVEL, MOTORING, FICTION, BOOK REVIEWS.

Containing 170 pages Fully Illustrated in Colour and Monochrome. Price 5/- net. (Post Free, 5/6.)

Obtainable from all Booksellers and Newsagents or direct from the Publishers

GALE & POLDEN, LTD., 2 AMEN CORNER, LONDON, E.C.4 WELLINGTON WORKS, ALDERSHOT NELSON HOUSE, PORTSMOUTH

# HER PRIVATES WE

by "Private 19022."

is the (slightly expurgated) published version of

### THE MIDDLE PARTS OF FORTUNE

(issued to subscribers only)

of which Mr. BENNETT wrote:-

"It will be remembered when All Quiet on the Western Front, with all its excellences, is forgotten . . . It is bound to survive as a major document in war-literature."

Fourth impression now selling.

7/6 PETER DAVIES LTD 7/6

# Carlisle & Gregson

(Established over 50 Years)

5, Lexham Gardens, Kensington, W.8

STAFF COLLEGES, PROMOTION,
All SERVICE Entrance Examinations,
... and UNIVERSITIES. ...

Telegraphic Address: "Lexjam, Kens, London." Telephone: Western 1287.



# N. A. A. F. I.

### SERVES THE SERVICES

It belongs to them, is controlled by them, and aims at promoting their interests in every way.

### THERE ARE NO SHAREHOLDERS

and all surplus revenue is returned to the Services in rebate, discount and other schemes for the benefit of the Services.

### THE N.A.A.F.I. SUPPLIES EVERYTHING

but is strictly limited to dealing with Serving Members of the Regular Forces, their wives and families, and Territorials during Annual Training.

Headquarter Offices: IMPERIAL COURT, UPPER KENNINGTON LANE, LONDON, S.E.11

### HOMES: DR. BARNARD



Barnardo Eoys baking bread for the World's Largest Family. 1600 loaves are baked every day, but this is only sufficient for less than half the family of 8,2nx children.

### Turning C.3 children into A.1 citizens

Dr. Barnardo's Homes rescue the nation's orphan and destitute children from conditions which would inevitably drag them down, and give them a new environment, train and place them out in life as useful and industrious men and women.

WILL YOU SEND A GIFT OF 10;- TO HELP BARNARDO'S CARRY ON THEIR WORK.

Cheques and Orders payable "Dr. Barnardo's Homes Food Fund" and crossed, may be sent to Dr. Barnardo's Homes, 148 Barnardo House, Stepney Causeway, London, E.1.

### CHARTER:

"No Destitute Child **Ever Refused** Admission.'

No red tape. No votes required.



Once destitute, Barnardo's are making a man of him!

# BARCLAYS BANK

LIMITED.

Head Office: 54 Lombard Street, London, E.C.3 and over 2,090 Branches in England and Wales.

Chief Foreign Branch: 168 FENCHURCH STREET, LONDON, E.C.3.

FREDERICK CRAUFURD GOODENOUGH, Esq., Chairman. SIR HERBERT HAMBLING, Bart, Deputy-Chairman. WILLIAM FAVILL TUKE, Esq., Vice-Chairman.

EDWIN FISHER. HENRY THOMAS MITCHELL.

Foreign General Manager;
WALTER OSBORNE STEVENSON.

Đr.	B	AL	ANCE S	HE	ET,	31st December, 1930.	Ct	
LIABII	LITIES.					ASSETS. £	8	. d.
Current, Deposit	£	8.	d. £	8.	d.	Cash in hand, and with the Bank of England 52,509,16 Balances with other British Banks and Cheques	4 8	10
and other Accounts including Reserve for Income Tax and Contingencies and balance of Profit and						Balances with other British Balaks and cheques in course of collection	0 0	0
Loss3 Balances in Account with Subsidiary Banks	9,884,922	4	8 349,273,28	3 6	2	Securities of, or guaranteed by, the British Govern- ment 53,893,050 14 British Dominions and Colo- nial Government Securities, Bank of England and		
Acceptances and &c., for accoun Capital:—	t of Custon	nen neri	12,710,524	1	4	British Corporation Stocks 1,724,765 11 4 Other Investments 469,830 1 1 56,087,64	6 6	10
Authorised— 1,425,000 "A" Shares of £4 each	5,700,000	0	0			Investments in Subsidiary Banks:— (at cost, less amounts written off) The British Linen Bank— £1,237,909 Stock 3,713,72	7 0	0
14,300,000 "B"	0,100,000					Union Bank of Manchester Limited-		0
Shares of £1 each	14,300,000		-			300,000 Shares of £5 each, £2 10s. paid 1,650,00 Other Subsidiary Banks— (including fully paid Shares and 500,000 "B" Shares of £5 each, £1 per Share paid up, in Barclays Bank (Dominion, Colonial and		U
Issued— 857,589 "A" Shares of £4 each, fully			-			Overseas)	7 18	7
11,760,811 "B" Shares of £1	3,430,356					Barclays Bank Limited "C" Shares 52,014 12 5 Balances in account with Subsidiary Banks 1,140.396 11 3		
paid 1 667,050 "C"	11,760,811	0	0		1	Liability of Customers for Acceptances and	7 17	5
Shares of £1 each, fully						Endorsements, &c 12,710,52- Bank Premises and Adjoining Properties (at	1	4
paid	667,050	_	-15,858,217			cost, less amounts written off) 6,320,140	3	0
Reserve Fund	***		£388,092.024	_		£388,092,02	7	-6
F. C. GOODENOUG	H. Chairm	an.	-		=	J. H. BECKWITH. \ Joint		-
HERBERT HAMBLI	ING, Deputy	y-Cl				C. D. CARRUTHERS } Chief Account	ants.	
E. FISHER, H. T. MITCHELL	General					W. N. SEELEY, Secretary.		

### AUDITORS' REPORT TO THE MEMBERS OF BARCLAYS BANK LIMITED

We have compared the above Balance Sheet with the balances on the Books at the Head Office, and with the detailed Returns from the Branches. We have verified the Cash with the Bank of England, the Cash and Bills at the Head Office, the Investments of the Bank and the Securities held against Money at Call and Short Notice. We have obtained all the information and explanations we have required, and we are of the opinion that the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Bank's affairs according to the best of our information and the explanations given to us and as shown by the Books and Returns of the Bank.

London, 8th January, 1931.

PRICE, WATERHOUSE & CO., KEMP, CHATTERIS, NICHOLS, SENDELI & CO., Auditors.

# Sir!

Doubtless you have interests in some Company or other dividend-earning concerns that rely to a great extent on well-conceived publicity for the creation of "sales."

Have you ever considered the wide and wonderful circulation that every copy of "The Journal of the Royal United Service Institution" gets?

You are in a position to appreciate, better than anybody, the tremendous pull of a Magazine of such standing. Here, therefore, is a medium of proved value. Its advertisement pages command attention again and again.

Why not try it jor the business you are interested in?

Rates, specimens and positions available from

ADVERTISEMENT MANAGER,
"THE JOURNAL OF THE ROYAL
UNITED SERVICE INSTITUTION"
(Central 0397)

2, AMEN CORNER, LONDON, E.C. 4

### Royal Soldiers Daughters' Home.



(Founded 1855). Incorporated 1923

For the Maintenance, Clothing, and Education of Daughters of Soldiers, whether Orphans or not.

The children are trained for Domestic Service and in special cases for Trades.

Patrons: Their Majesties The King and Queen. Vice-President: General The Right Hon. Sir Neville Lyttelton, G.C.B., G.C.V.O.

Vice-President & Chairman: Field-Marshal Viscount Plumer, G.C.B., G.C.M.G., G.C.V.O., G.B.E.

Admission, between the ages of six and eleven years, by approval of the Committee. Age of departure, seventeen, when a situation is guaranteed to them and they are supplied with an outfit.

GENEROUS GIFTS, Annual Subscriptions and Donations urgently invited and thankfully received by the Secretary, Major H. S. Marshall, D.S.O., at the Home, 65, Rosslyn Hill, Hampstead, N.W.3, or the Hon. Treasurer, Lloyds Bank, Ltd. (Cox's & King's Branch), 6, Pall Mall, S.W.1.

### ALPINE SPORTS, LTD.

5 Endsleigh Gardens, London, W.C.1 Piccadilly Office, 2 Albany Courtyard

# THE PIONEERS OF WINTER SPORTS TRAVEL

"Better than hunting, at a tenth of the cost."

PUBLIC SCHOOLS WINTER SPORTS CLUB HOTELS at

BERGÜN MÜRREN MALOJA PONTRESINA MORGINS SILS WENGEN

Arrangements also at Adelboden, Andermatt, Arosa, Davos, Engelberg, Griesalp, Geindelwald, Kitzbühel, Klosters, Lenzerheide, St. Anton, Savognin, Scheidegg, Villars, Zermatt, etc.

Illustrated booklet, plans and particulars on request. Rates to suit all bockets.

Spend your leave in Switzerland

# PALL MALL DEPOSIT

AND FORWARDING CO. LTD.

Carlton Street, Lower Regent Street

(FIFTY YARDS FROM PICCADILLY CIRCUS, S.W. 1)

Telephone: GERRARD 4546

Cables : BURNISHED, LONDON

# BAGGAGE STORED

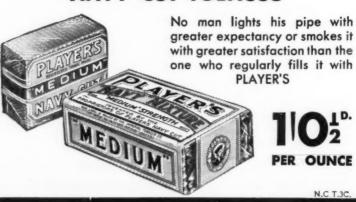
In the centre of West End, near all the Service Clubs and principal Hotels

Access to baggage available during office hours without notice. Accommodation for unpacking and repacking kit free of charge.

REDUCED RATES FOR MEMBERS OF H.M. SERVICES

# PLAYER'S

NAVY MIXTURE or NAVY CUT TOBACCO



# **JOURNAL**

of the

# Royal United Service Institution

Published by Authority of the Council.



Postal Address: Whitehall, London, S.W.1

Telephone No. Victoria 0654.

Telegraphic Address: "Russatus, Parl, London."

Vol. LXXVI. FEBRUARY, 1931. No. 501.

Sole Advertising Contractors:
Gale & Polden, Ltd., 2, Amen Corner, E.C.4. Telephone: Central 0397.

### ROYAL UNITED SERVICE INSTITUTION

FOR

"THE PROMOTION AND ADVANCEMENT OF NAVAL AND MILITARY SCIENCE AND LITERATURE." Royal Charter, 22nd February, 1860 (23 Vict.).

### PATRON:

H.M. KING GEORGE V.

### VICE-PATRON

H.R.H. The PRINCE OF WALES, K.G., K.T., K.P., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., G.B.E., M.C.

### PRESIDENT:

Field-Marshal H.R.H. The DUKE OF CONNAUGHT, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., G.B.E., V.D.

### VICE-PRESIDENTS:

Field-Marshal The Viscount ALLENBY, G.C.B., G.C.M.G., D.C.L., LL.D., General The Viscount BYNG, G.C.B., G.C.M.G., M.V.O., LL.D.

Admiral of the Fleet The Earl JELLICOE, G.C.B., O.M., G.C.V.O., LL.D. Lieut.-Colonel Sir ARTHUR LEETHAM, Knt., K.C.V.O., C.M.G., F.S.A. Field-Marshal Sir W. R. ROBERTSON, Bart., G.C.B., G.C.M.G., K.C.V.O., D.S.O., D.C.L., LL.D.

Marshal of the Royal Air Force Lord TRENCHARD, G.C.B., D.S.O., D.C.L., LL.D. Admiral Sir R. G. O. TUPPER, G.B.E., K.C.B., C.V.O.

### ELECTED MEMBERS OF COUNCIL:

Royal Navy.

Rear-Admiral E. A. ASTLEY-RUSHTON, C.B., C.M.G.

Rear-Admiral W. F. FRENCH, C.M.G.

Admiral Sir George P. W. Hope, K.C.B., K.C.M.G.

Admiral of the Fleet Sir Roger J. B. Keyes, Bt., G.C.B., K.C.V.O., C.M.G., D.S.O., LL.D., D.C.L., (Vice-Chairman of the Council).

### Royal Marines.

Lieut-General A. G. LITTLE, C.M.G., R.M., A.D.C.

### Royal Naval Reserve.

Captain Sir D. WILSON-BARKER, Knt., R.D., R.N.R.

### Royal Naval Volunteer Reserve.

Captain The Earl Howe, C.B.E., V.D., R.N.V.R.

### Regular Army.

General Sir J. F. NOEL BIRCH, G.B.E., K.C.B., K.C.M.G. Major-General Sir John E. Capper, K.C.B., K.C.V.O.

Colonel C. H. Colvin, C.B., D.S.O.

Brigadier B. D. FISHER, C.B., C.M.G., D.S.O., A.D.C.

Major-General P. G. GRANT, C.B., C.M.G.

General Sir A. A. Montgomery-Massingberd, K.C.B., K.C.M.G.

Lieut.-Colonel A. F. A. N. THORNE, C.M.G., D.S.O.

### Militia.

Colonel Lord AMPTHILL, G.C.S.I., G.C.I.E.

Territorial Army.

Colonel A. S. BATES, D.S.O., T.D.

Colonel J. Josselyn, C.M.G., D.S.O., O.B.E., T.D.

Brig.-General The Earl of Lucan, K.B.E., C.B., T.D.

Colonel B. ABEL SMITH, D.S.O., M.C., T.D., A.D.C.

### Indian Army.

Field-Marshal Sir Claud W. Jacob, G.C.B., G.C.S.I., K.C.M.G. (Chairman of the Council).

### Royal Air Force.

Air Vice-Marshal Sir Vyell Vyvyan, K.C.B., D.S.O.

### REPRESENTATIVE MEMBERS.

ADMIRALTY.

Director of Naval Intelligence: Rear-Admiral C. V. USBORNE, C.B., C.M.G.

WAR OFFICE.

Director of Staff Duties: Major-General C. Bonham-Carter, C.B., C.M.G., D.S.O.

AIR MINISTRY.

Deputy Chief of the Air Staff: Air Vice-Marshal C. L. N. NEWALL, C.B., C.M.G., C.B.E., A.M.

### EX-OFFICIO MEMBERS.

First Sea Lord: Admiral Sir Frederick L. Field, K.C.B., K.C.M.G.

Chief of the Imperial General Staff: Field-Marshal Sir George F. Milne, G.C.B.,

G.C.M.G., D.S.O. Chief of the Air Staff: Air Chief-Marshal Sir John M. Salmond, K.C.B., C.M.G.,

C.V.O., D.S.O., A.D.C.

Director-General of the Territorial Army: General Sir Reginald B. Stephens, K.C.B., C.M.G.

President of the Royal Naval College, Greenwich: Vice-Admiral W. H. D. BOYLE, C.B. Commandant of the Imperial Defence College: Air Marshal Sir Robert Brooke-

POPHAM, K.C.B., C.M.G., D.S.O., A.F.C. Director of the Royal Naval Staff College: Captain T. F. P. CALVERT, D.S.O., R.N. Commandant of the Staff College, Camberley: Major-General J. G. DILL, C.B.,

C.M.G., D.S.O. Commandant of the R.A.F. Staff College, Andover: Air Commodore P. B. JOUBERT DE LA FERTÉ, C.M.G., D.S.O.

### HONORARY MEMBERS OF THE COUNCIL.

General Sir A. W. CURRIE, G.C.M.G., K.C.B. (Canada).

Lieut.-General Sir J. Monash, G.C.M.G., K.C.B., V.D. (Australia).

Major-General Sir A. H. Russell, K.C.B., K.C.M.G. (New Zealand).

General The Right Hon. J. C. SMUTS, P.C., C.H. (South Africa).

Lieut.-General H.H. THE MAHARAJAH OF BIKANER, G.C.S.I., G.C.I.E., G.C.V.O., G.B.E., K.C.B. (India).

### STAFF.

Secretary, Editor and Chief Executive Officer: Captain E. Altham, C.B., R.N.

Librarian and Curator: Colonel E. L. Hughes, D.S.O., O.B.E.

Assistant Editor: Lieut.-Colonel H. G. de WATTEVILLE, C.B.E., late R.A.

Assistant Executive Officer: Captain S. J. PARKER, M.C., D.C.M.

Auditors: Messrs. Barton, Mayhew & Co. Alderman's House, Bishopsgate, E.C.2.

Bankers: ROYAL BANK OF SCOTLAND, DRUMMOND'S BRANCH, Charing Cross, S.W.I.

### **MEMBERSHIP**

Full particulars of Membership with alternative forms for Bankers' Orders can be obtained on application to "The Secretary, Royal United Service Institution, Whitehall, London, S.W.I."

Commissioned Officers of all H.M. fighting Services, including those of the Dominions, Colonies and India, and Midshipmen of the Royal Navy, Royal Naval Reserve and Royal Naval Volunteer Reserve, are eligible for membership without proposal or ballot.

Naval, Military and Air Force Cadets are eligible on the recommendation of their Commanding Officers.

An Officers' Mess may subscribe to the Journal, but is not eligible for membership.

### TERMS OF SUBSCRIPTION.

Annual Members.—Entrance £2 2s. od.; annual subscription, payable on 1st January each year, £1 5s. od.

Annual Members joining on and after 1st October are not called upon for any subscription for the following year.

### LIFE MEMBERS.

(a) £20 os. od., payable in one sum or:

(b) £21 os. od., payable in four instalments of Five Guineas, the first on joining, the others on 1st January of each succeeding year.

The above rates of subscription entitle Members to the loan of four volumes at a time from the Library, provided they are at Home or at those stations abroad where arrangements exist for forwarding books.

It is important that Officers joining should furnish full and clear particulars of their Name, Rank, Ship, Regiment or R.A.F. Squadron, etc., and the address to which they wish their JOURNALS sent.

Officers of the Indian, Dominion and Colonial Naval, Military and Air Forces temporarily in the United Kingdom may become members for a period of six months on payment of Ten Shillings and Sixpence, or One Guinea for twelve months.

Special Facilities for Junior Officers.—Officers of less than three years' seniority in commissioned rank, Midshipmen R.N., R.N.R., R.N.V.R., and Naval, Military and Air Force Cadets are not required to pay the Entrance Fee, but their membership will date from 1st January.

### THE INSTITUTION.

The Royal United Service Institution is situated just below the War Office in Whitehall. It has the best professional Library in the United Kingdom; a Lecture Theatre where an autumn and winter session of lectures is devoted to subjects of current or historical Service interest. The Reading and Smoking Rooms are provided with the leading papers, periodicals and writing materials.

The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

### THE JOURNAL.

The R.U.S.I. JOURNAL is published quarterly and sent post free to Members in any part of the world.

### THE MUSEUM.

Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S.I. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s.; Saturday after Ncon, 6d.

### SECRETARY'S NOTES

February, 1931.

### Centenary Celebrations, 1931.

A leaflet is enclosed in this JOURNAL giving details of the Celebrations which are being arranged in connection with the Centenary of the Foundation of the Royal United Service Institution. Members are requested to make these as widely known as possible.

### Centenary Fund.

This Fund has been opened with a view to securing some object or objects of lasting benefit to the Institution or Museum. The Centenary Committee have recommended as the first purpose of the Fund the acquisition of a portrait of His Majesty The King. Donations, however small, will be most welcome. Cheques should be made payable to the Royal United Service Institution and crossed "A/c. of Centenary Fund." The Committee beg to acknowledge receipt of donations to the Centenary Fund from the following Members since the publication of the November Journal:—N. A. H. Budd, Esq., Captain P. K. Kekewich, R.N., Colonel A. S. Bates, Lieutenant-Colonel E. G. S. Trotter, Lieutenant-General Lord Baden Powell, Lieutenant-Commander H. C. Coles, R.N.R., Admiral Sir D. St. A. Wake, Major C. W. Adair, R.M., B. E. Sargeaunt, Esq., Captain Sir David Wilson Barker, R.N.R.

### Anniversary Meeting.

The Anniversary Meeting will be held on Tuesday, 3rd March, at 3.30 p.m. The Council will present their Annual Report and Accounts, and there will be an election to fill the vacancies on the Council. The Gold Medal will be presented to the winner of the 1930 Essay Competition.

### Council.

The following Members of the Council, having completed three years' service, retire at the Anniversary Meeting:—

Admiral Sir George P. W. Hope, K.C.B., K.C.M.G.
Captain Sir D. Wilson-Barker, Knt., R.D., R.N.R.
General Sir J. F. Noel Birch, G.B.E., K.C.B., K.C.M.G.
Colonel C. H. Colvin, C.B., D.S.O.
Major-General P. G. Grant, C.B., C.M.G.
Lieutenant-Colonel A. F. A. N. Thorne, C.M.G., D.S.O.
Field-Marshal Sir Claud W. Jacob, G.C.B., G.C.S.I., K.C.M.G.
Air Vice-Marshal Sir Vyell Vyvyan, K.C.B., D.S.O.

Rear-Admiral E. A. Astley-Rushton, C.B., C.M.G., resigns from the Council on taking up a sea-going Command.

The vacancies will be filled at the Anniversary Meeting in accordance with Chapter 3 of the Bye-Laws.

Air Commodore P. B. Joubert de la Ferté, C.M.G., D.S.O., has succeeded Air Vice-Marshal E. R. Ludlow-Hewitt, C.B., C.M.G., D.S.O., M.C., as an ex-officio Member of the Council on taking up the appointment of Commandant of the R.A.F. Staff College, Andover; Major-General J. G. Dill, C.B., C.M.G., D.S.O., has succeeded Major-General C. W. Gwynn, C.B., C.M.G., D.S.O., on taking up the appointment of Commandant of the Staff College, Camberley; and Air Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., has succeeded Major-General W. H. Bartholomew, C.B., C.M.G., D.S.O., on taking up the appointment of Commandant of the Imperial Defence College.

### New Members.

The following Officers joined the Institution during the months of November, December and January:—

### ROYAL NAVY.

Sub-Lieutenant M. L. Hardie, R.N.
Rear-Admiral J. K. Im Thurn, C.M.G., C.B.E.
Midshipman W. B. R. Morrison, R.N.
Lieutenant M. A. Everett, R.N.
Midshipman M. W. B. Craig-Waller, R.N.
Midshipman N. G. Hallett, R.N.
Commander B. Acworth, D.S.O., R.N.
Lieutenant-Commander G. S. Loraine, R.N.R. (retired).
Sub-Lieutenant J. Y. Thompson, R.N.
Sub-Lieutenant A. H. Terry, R.N.
Sub-Lieutenant D. S. Johnston, R.N.
Commander H. P. Mead, R.N. (retired).
Captain R. H. O. Lane-Poole, O.B.E., R.N.
Sub-Lieutenant G. M. Bennett, R.N.

### ARMY.

Lieutenant J. H. Spencer, Dorsetshire Regiment. Major O. C. St. John, R.A.S.C. Captain D. C. Bullen-Smith, M.C., King's Own Scottish Borderers. Captain P. J. Dawson, Royal Tank Corps. Major J. K. Dunlop, M.C., 12th London Regiment, "Rangers." Lieutenant-Colonel R. G. Currey, Leinster Regiment (retired). Captain A. F. Fisher, 12th Lancers. Captain A. J. H. Bourke, 4th P.W.O. 8th Punjab Regiment, Lieutenant-Colonel P. J. Mackesy, D.S.O., M.C., R.E. Major R. A. Bagnold, Royal Signals. Captain R. J. Appleby, Durham Light Infantry. Captain E. F. Benjamin, R.E. Captain T. N. Penlington, The Buffs. Captain M. S. Wheatley, Royal Corps of Signals. Captain C. J. D. Tomkins, 2nd Baluch Regiment. Captain J. S. N. Bernays, M.C., Leicestershire Regiment. Colonel B. A. Hill, D.S.O., R.A.O.C. Major J. K. Lawson, Royal Canadian Regiment.

and Lieutenant J. G. C. Low, Royal Tank Corps (S.R.) and Lieutenant K. Swettenham, Highland Light Infantry. Captain P. A. Tucker, R.E. and Lieutenant S. H. D. Jagot, R.A.S.C. Lieutenant D. W. A. Cleeve, R.E. and Lieutenant R. N. H. C. Bray, Duke of Wellington's Regiment. Lieutenant-Colonel G. E. Smart, D.S.O., R.G.A. (R. of O.). Captain F. L. Norris, M.C., York and Lancaster Regiment. Lieutenant A. C. Cottell, The Welch Regiment. Captain T. Scott, 6th D.C.O. Lancers. Captain J. Barron, M.C., R.A. Lieutenant A. G. Fairrie, M.B.E., Queen's Own Cameron Highlanders. Lieutenant-Colonel C. O. Head, R.A. (retired). Lieutenant J. H. S. Watt, The Hazara Pioneers, I.A. 2nd Lieutenant F. R. Watson, Royal Tank Corps. Lieutenant W. H. Fox, Seaforth Highlanders. Major R. H. Baily, Royal Warwickshire Regiment

### ROYAL AIR FORCE.

Wing Commander A. T. Whitelock, R.A.F. Flight-Lieutenant W. A. Glasper, R.A.F. Squadron Leader H. E. P. Wigglesworth, D.S.C., R.A.F. Flight-Lieutenant B. B. Caswell, R.A.F.

### Special Facilities for Junior Officers.

The special attention of Members is invited to the new Bye-Law governing the entrance of Junior Officers to the Institution. The terms are as follows:—

"Commissioned Officers of the Home, Dominion, Indian and Colonial fighting Services and their Reserves, of three years or less seniority as such; Midshipmen, R.N., R.N.R. and R.N.V.R.; and Naval, Military and Air Force Cadets, shall be admitted to Membership without Entrance Fee on payment of the first annual subscription of £1 5s.

"In all cases eligibility for such Membership shall be governed by para. I of Chapter 2.

"An Officer who is admitted without entrance fee and who subsequently fails to pay his annual subscription regularly or resigns, shall not be re-admitted without payment of such fee, notwithstanding the fact that he may, by virtue of his rank or seniority, be otherwise eligible for such concession.

"Officers joining under this Bye-Law will date their Membership from 1st January of the year in which they join. They shall not have the privilege of becoming Members in October and of paying no subscription on the ensuing 1st January."

### Gold Medal Essay, 1930.

The following additional Essays have been received:-

" Nil sine labore."

"Majora tento praesentibus Aequus."

"Victus invictus sum."

### Results of the Competition.

The following is the result of the competition for the Gold Medal of the Royal United Service Institution and the Trench Gascoigne Prize:—

Gold Medal and 1st Trench Gascoigne Prize:-

Captain D. W. Boileau, R.A.S.C.

Second Trench Gascoigne Prize:

Captain G. C. Shaw, R.A.O.C.

### Gold Medal Essay Subject (Naval), 1931.

The following is the subject which has been selected:-

"Discuss the forms of attack to which British sea-borne trade is most likely to be exposed in the event of war with one or more European Continental Powers and indicate the lines on which defence should be developed in order to meet such attacks, having regard to existing International limitations of armaments."

In connection with these Competitions the Council have decided that, in future, essays will be adjudicated on their general merits, and the expression of views which do not conform strictly to generally accepted opinions will not necessarily be considered to detract from the value of an essay.

### Change in Lecture Programme.

The lecture on "High Speed Craft for Naval Uses" to be given by Sir John Thornycroft, K.B.E., has been postponed to 3 p.m., on Wednesday, 11th March

### JOURNAL.

### Notes for Guidance of Contributors.

The Editor has been asked to publish some notes for the guidance of those who desire to offer contributions to the JOURNAL. The following are the principal points to which attention is invited:—

- (1) Preference will be given to articles which assist in the "promotion and advancement of naval and military science and literature" in practical form and which are written with an up-to-date and first-hand knowledge of the subject with which they deal.
- (2) Historical articles should point some definite lesson for the present or future and not merely recapitulate accounts of episodes of the past.
- (3) Articles of interest to students of war in all three Services are preferable to those of a highly technical nature or of such restricted interest that they could only appeal to a very limited number of our readers.
- (4) As a general rule articles should not exceed 3,000 words in length. Apart from considerations of space, experience shows that the short article which makes its points concisely is more effective and more widely read than one of a long and rambling character.

- (5) Contributions intended for the JOURNAL should be addressed to the Editor. They should, if possible, be typed (double spacing), but short articles in legible manuscript can be accepted if a typewriter is not available.
- (6) The Editor is authorized to obtain official sanction for the publication of articles written by serving officers; it must be clearly understood that nothing written by such officers can be accepted for the JOURNAL without this sanction being obtained.
- (7) Except where contributors are good enough to offer articles without remuneration, this will be paid at the authorized rates.
- (8) Attention is invited to the note on the first page of each JOURNAL regarding authors alone being responsible for their opinions; also to the notice at the head of "Correspondence."

### Copies of the Frontispieces.

A limited number of copies of the coloured Frontispieces, published in recent numbers of the JOURNAL, are available for sale and can be supplied, post free, for 1s. 6d. each; 2s. 6d. a pair; 3s. 6d. for three; or 5s. the complete set.

### Price of Journal to Non-Members.

The price of the JOURNAL to Non-Members, as from February, 1927, number, is 7s. 6d., or the four quarterly numbers will be sent for an annual subscription of £1 10s.; post free in either case.

### Trade Discount.

Recognised firms can now be supplied with not less than one dozen copies of the JOURNAL at a time, at a wholesale price of 7s. each copy, the buyer to collect from the Institution.

### Additional Copies of the Journal.

Additional copies of early numbers of the JOURNAL, if available, can be supplied, post free, to Members at :-

3s. for Journals prior to February, 1927.

4s. for the JOURNAL of February, 1927, and later.

### CORRECTION.

In the report of the discussion after the lecture on "The Change in the Naval Situation," by Admiral Sir Richard Webb, published in the JOURNAL for November, 1930, page 742, line 13, the words "of the Navy" should be erased after "the political object."

Page 742, line 23, for "20,000 tons" read "25,000 tons."

### LIBRARY.

### Facilities for Borrowing Books.

The special attention of Members who are now paying the new annual subscription of £1 5s. od., is invited to the fact that they are thereby entitled to the full privileges of the Lending Library without further charge. These include the right to have sent to them not more than four volumes at a time on loan, the Member paying postage both ways.

Old Members who have not wished to conform to the new arrangement and who are still paying the original subscription of £1 is, od., must pay an additional subscription of 10/- per annum in order to belong to the Lending Library.

All Members are, of course, free to use the Library when they visit the Institution.

### Rules Governing Return of Books.

The attention of Members is invited to the following Regulations governing the retention and return of books:—

- (1) Certain books, for which there is a special demand, must not be retained longer than a fortnight after the date of receipt. A notice to this effect will be found in the book.
- (2) In the United Kingdom.—Books must normally be returned within one month of the date of issue; but the Librarian is authorised to make extensions of one month at a time on application by a Member, up to a maximum of three months from the date of issue, if the work is not required by another Member.
- (3) All Stations Abroad—Books must not be retained for more than seven months from the date of issue.

Members are specially requested to conform strictly to these regulations, as failure to do so causes much inconvenience to others and involves the Institution in unnecessary expense and clerical labour.

### MUSEUM.

### Special Exhibition.

A Special Exhibition depicting a "Procession of the King's Ships" has been opened. It shows models of warships from the time of the ancient Briton's canoe up to the latest types in the fleet of to-day. The models, which have been kindly lent by the Department of Overseas Trade, have been grouped in six sections:—

I, Oars and Early Days of Sail; 2. The Sailing Era; 3. Sail and Steam; 4. The Pre-War Navy; 5. The Great War Period; 6. The Fleet of To-day.

### Collection of Medals.

The Institution having had to surrender the Cheylesmore Collection of Medals at the request of the Trustees, the Council are desirous of forming a new collection which will be a permanent feature in the Museum. The Institution already possesses a large and varied collection of medals which are being grouped together but offers of additions to the collection will be most welcome. Details of such offers should however be communicated before medals are sent.

Purchase Fend.

### Additions.

### PERMANENT.

- (8347) French Infantryman's Sword, 1820 to 1850.—Presented by Captain E. C. Hopkinson.
- Sharp's four-barrelled .30 rim fire pistol, 1559.—Presented by Captain Sir W. Dalrymple Champneys.
- Collection of naval shell.—Presented by The Lords Commissioners of (8349)the Admiralty.
- (1) Model of a Fairey III F. three-seater reconnaissance aeroplane. (8350)(2) Model of a Fairey "Fox" two-seater day-bomber aeroplane. Presented by the Fairey Aviation Co.
- (8351) Sash worn by Lieutenant-General Sir John Hearsey.—Presented by L. P. Cox, Esq.
- (8352) Collection of engravings.—Bequeathed by the late General G. Fergus
- Collection of medals.-Presented by Colonel N. C. Channer. (8353)
- Collection of German aerial bombs used during the Great War .-(8354)Presented by Major S. Lambert.
- (8355) German Incendiary bomb dropped near the airship shed at St. Pol, Dunkerque in 1917.—Presented by Major S. Lambert.
- (8356) French Lepec explosive bomb.—Presented by Major S. Lambert.
- (8357) British aerial bombs used during the Great War.-Presented by Major S. Lambert.
- (8358) Crimean and Burman medals.—Presented by Major O. Teichman.
- (8359) Model of H.M.S. "Dartmoor," twin-screw minesweeper.—Purchased.
- (8360) Part of a bar-shot fired into Gibraltar during the Great Siege, 1782-3 .-Presented by Lieutenant-Colonel F. J. Ashburner.
- (8361)Autograph letter from Lord Roberts to Colonel G. F. Ellison, C.B.-
- Presented by Lieutenant-General Sir G. F. Ellison, K.C.B., K.C.M.G. Collection of Regimental badges and buckles.—Presented by (8362)J. W. Beard, Esq.
- Uniform of an A.D.C. in the H.E.I. Company's Army, 1826.—Presented (8363)by Miss C. Meade.
- (8364) Belt buckle, Staats Artillery, Boer War, 1900.-Presented by Dr. A. Gibbons.
- (8365) Picture showing the uniform of the 13th Infantry Division, Russian Imperial Army, Crimean period.—Presented by Major-General Goudime-Levkovitsch.
- Medals of Lieutenant-General H. Milne.—Presented by Miss M. Milne. (8366)
- Medals of Surgeon-General P. W. Sutherland.—Presented by Miss M. (8367)
- (8368) Medals of Lieutenant-Colonel R. L. Milne, Seaforth Highlanders.— Presented by Miss M. Milne.
- (8369) Model of Hussar Officer, 1806.

### LOAN.

Collection of relics from S.M.S. "Emden."-Deposited by Major E. (3584)Latham.

### Attendance.

- The amount taken for admission during the past Quarter was :-£129 12s. 6d. in November.
  - £85 3s. 6d. in December.
  - £125 10s. 6d. in January.

### Purchase Fund.

This Fund has been opened to assist in the purchase of new exhibits. The Council hope that it will receive the support of Members interested in the Museum.

				£	S.	d.
Balance in hand	 			 47	13	3
B. E. Sargeaunt, Esq.	 			 1	0	0
Purchased :—				48	13	3
Model of Minesweeper		• •	• •	 10	0	0
* *			*	£38	13	3

### CENSUS OF REGIMENTAL COLOURS.

As announced in the last number of the JOURNAL, it has been decided to compile a Census of Colours, Standards, Guidons, Trumpet and Pipe Banners of all branches of H.M. Land Forces, including Regular Troops, Militia, Yeomanry, Territorial Force or Army, as well as of Fencible and Volunteer formations of the past, and of the Royal Marines. The success of this project must depend on the co-operation of voluntary supporters. Members and others interested are asked to volunteer as representatives, either of a particular regimental unit, or of a district or area.

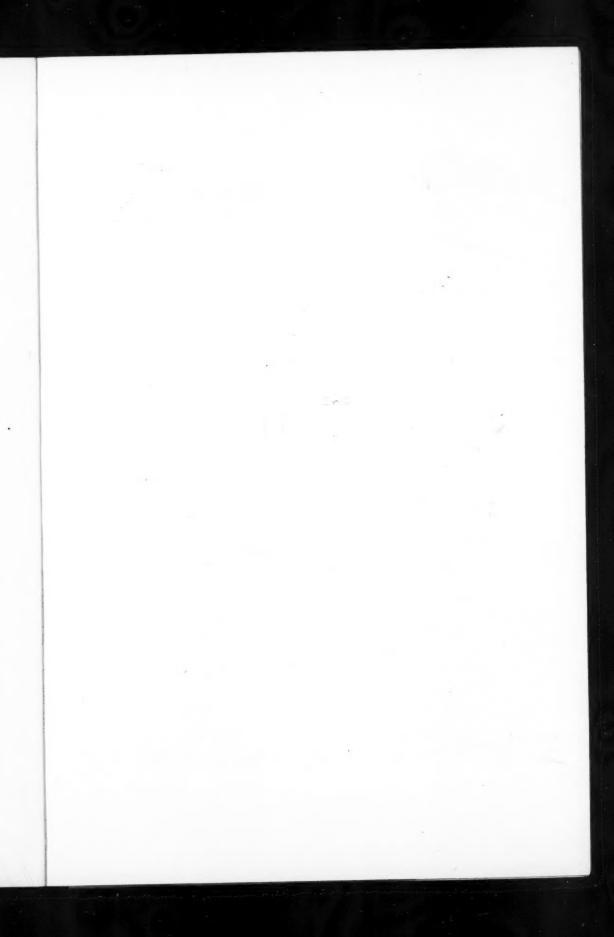
On being registered these representatives will receive a supply of cards stating the exact particulars which they are asked to fill in. When completed, the cards should be returned to the Secretary of the Royal United Service Institution, and the envelope marked "Colours" in the top left-hand corner. They will then be filed until sufficient information has been collected to warrant further utilization.

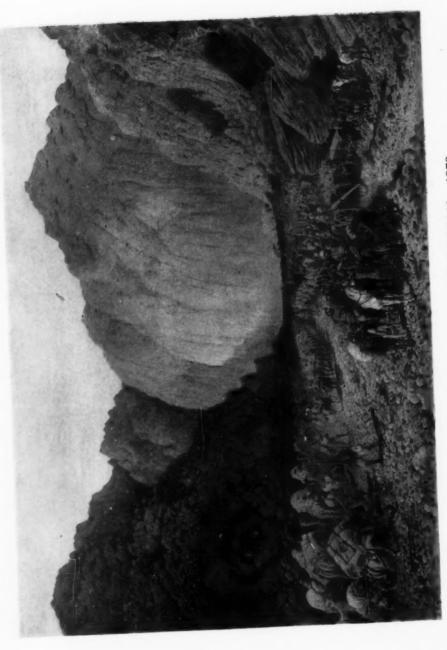
The ultimate object is to publish the Census in volume form, but this again must depend on the requisite financial support being forthcoming.

It is particularly desirable that, whenever possible, cards should be accompanied by a good photograph of the Colour or Standard, as it exists to-day. To be of value this must show the Colour extended and not hanging in folds. The following, in addition to those whose names appeared in the August Journal, have been good enough to volunteer their services:—

### Regiment or District.

LieutColonel H. M. Burrows	1st Bn. 12th Frontier Force Regt.
Commander J. W. Damer Powell	
R.N.R	Somerset.
Captain A. O. Temple Clark	Devon.
Major W. V. Buckley	Duke of Connaught's Light Infantry.
Major C. A. Markham	Northamptonshire & Rutland Militia.
Major J. S. Davenport	Bedfordshire & Hertfordshire Regt.
LieutColonel R. O. Alexander	Royal Canadian Regiment.
Colonel A. Crookenden	Cheshire Regiment.
Brigadier-General A. E. J. Cavendi	sh,
C.M.G	Argyll and Sutherland Highlanders.





THE GWAJHA PASS, AFGHANISTAN, 1879.

From the picture by Lieut,-General Sir R. H. Sankey, K.C.B., in the Royal United Service Institution.





# THE JOURNAL

OF THE

# Royal United Service Institution

Vol. LXXVI.

FEBRUARY, 1931.

No. 501

[Authors alone are responsible for the contents of their respective Papers.

All communications (except those for perusal by the Editor only) should be addressed to the Secretary, Royal United Service Institution.]

### THE NORTH-WEST FRONTIER OF INDIA

By Lieutenant-General Sir George MacMunn, K.C.B., K.C.S.I., D.S.O.

'The flying bullet down the pass
Which whistles shrill, all flesh is grass.''
Frontier Arithmetic.

### THE MAJOR PROBLEM

HE defence of the Indian Frontier is an old enough problem which has given birth to reams of writing, yet its aspects and its solutions change as the years roll on and the world's equipments move with them. To discuss this matter with any clarity. however, it is essential to remember that there is a greater and a lesser problem. The greater problem is that of the defence of the frontier in its sense of the frontier of India vis-à-vis definite invaders from outside. This is the ancient problem of Indian Empires. When the British came to Delhi in the days of the Marquis Wellesley, the Government were intensely concerned at the constant invasions by the Durannis. Nine times in his reign had Ahmad Shah, the Duranni Emperor, invaded India. In 1761 he had destroyed the whole of the Mahratha chivalry at the last battle of Panipat, when the Mahratha host had set out to dominate the remnant of the Mogul Empire and to crush the Rohilla power in India. The news of the slaughter went through India by the banker's channel, and in banker's metaphor-"three pearls of

great price have been dissolved, twelve gold mohrs have been lost, and the silver and copper cannot be cast up." In the British time Tippu, Sultan of Mysore, had urged Zaman Shah to come to his aid, and Zaman Shah, the grandson of Ahmad Shah, was busy enough invading India to try and recover his lost Punjab provinces from Ranjhit Singh, the Sikh, whom a few years before he had appointed Governor on his behalf.

Afghan encroachment was a very real military problem in the days of Lord Lake and the Marquis Wellesley when for some years the prospect of Russian and Persian invasion, with Napoleon Buonaparte as co-respondent, was equally insistent and tinged all our plans. It was this same loom of the Bear that sent us to Kabul in 1839 and in 1879. Till the year 1919 the major problem before Lord Kitchener and his successors was how to defend Afghanistan from the Russians with Afghanistan as a British ally. In 1919 the mad folly of Amanullah sent us back to the days of Zaman Shah, and we had once again to face the problem of an Afghanistan invading India and bringing with her all the tribesmen of Roh within our own political boundaries. That is the Major Problem of the defence of India, one which has made us go forward to the plateaux of Landi Kotal and Baluchistan, so as to be able to move to Afghan aid or meet the Afghans themselves free of the heat of the Indus valley.

### THE LESSER PROBLEM

The lesser problem is a ridiculous but also very real one. It is the defence of everyday peaceful citizens within our administrative border from their fellow British subjects within our political, but outside that administrative, border. Let us for a moment see how this situation arises, for it is almost without parallel in other parts. As a man cannot get rid of his shadow so a country cannot escape from its past, and this is truer of India and Afghanistan than elsewhere. As recently as the beginning of the XVIIIth century, when good Queen Anne ruled in Britain, Eastern Afghanistan, the country on the hitherside of the Hindu Kush, was part of the throne of Delhi, the Emperor's heir being governor of Kabul. For generations had this been so; but in effect the governors of Kabul and Kandahar, of Kabulistan and Zabulistan, governed where valleys were accessible, yet their writ did not run in the masses of tumbled hills which lay between the Kandahar-Ghazni-Kabul road and the Indus. Several public routes lay through those hills from time immemorial. From Kandahar many routes converged through the Suleiman mountains on Mooltan, for long the inner key of India as Herat was the outer. The routes by the Vihoa, Harrand and Mangrota gorges were less dangerous than those to the North, but dangerous enough to the caravan that was not well-armed. The routes to the

North, those from Ghazni via the Gumal and the Tochi valleys, by the pass of the Camel's Neck, or by the Khaiber were equally dangerous to armies as to caravans. The constant come and go of invading forces hammered at times the tribesman into some sort of quietude, but at all times woe betide the weak caravan or the slothful force. The former, however, could generally buy safe conduct. The tribes on the passes, Wazirs of all kinds, Zaimukhts, Chamkanis, Bangash, Orakzai and Afridi, had shot at the strong and slashed at the weak from time immemorial, and bowed the knee to no man, be he Emperor of Ghazni or King of Ghor, Emperor of Delhi or King of Kabul. Even the mighty Alexander gave the Khaiber a wide berth lest the Aparoetae should harry his convoys.

Where the British posts to-day guard the raider's roads into the cultivated riverine plains that lie West of the Indus, there, in almost every case, are the ruins of a post set for the same business by the Græco-Bactrian kings of the Indus; for there is no new thing under the sun. It may be said that the tribes in these hills have always been independent, when imperial rule of many dynasties enveloped them on all sides. Racially they are largely of the Aryan stock, grown hardier and fiercer from their surroundings and climate, with here and there a bit of some Afghan or Turkish tribe sandwiched in among them.

By the middle of the XVIIIth century the Afghan Empire had arisen, and it reached for a while to the Satlej. Then Governor Ranjhit Singh by the end of the century had begun to think of throwing off the yoke. By 1820 the Afghans were not only across the Indus but back at Ghazni and through the Khaiber, and the Sikh frontier lay at the foot of the tribal hills very much as it is now. The Duranni power at Kabul no more controlled the tribes in the hills through the passes than had the earlier rulers.

When the need to foresee the protection of India and the desire to be quit of anarchy in Kabul took the British to Afghanistan, then British officers for the first time came into touch with the hill tribes in these mountains of Roh, to give them their old name. The Rohilla as colonists in India they had met, and also the men of Roh directly serving as mercenaries in the forces of Indian chiefs, but not till 1839 did they come to see them on their native hills. The Afridi soon joined the Khaiber levies that held the pass; Ferris' Jezailchis and other tribal corps at once answered to the charm of British leading, even sticking to us in the days of disaster.

When we left Kabul in 1842, we said good-bye to the frontier for four short years. In 1846, after the first Sikh War, Edwards, Nicholson, the Abbotts, and the Lawrences were employed on behalf of the Sikh Government in pacifying the border. In 1849, when the experiment of

an improved Sikh state failed and the Punjab was annexed, then our administration advanced to where it is now, to the foot of the hills inhabited by the mountaineers of Roh. Ever since, our efforts have been directed to preventing the hillsmen raiding the plains, to extending such neighbourly and friendly amenities as they would accept, and gradually to gaining control over such of the hill routes from Afghanistan as trade wished to use. Before long it became necessary to fix with Afghanistan, especially in the matter of trade routes, some line where respective responsibility was to end and begin. This resulted in the settlement of a political boundary between the two countries known for the most part as the Durand Line. The settling of this in the nineties has brought us to the situation as it exists to this day. In the seventies our plans brought us by mutual agreement to the overlordship of British Baluchistan, and here from the border of Persia to the vicinity of the Gumal we have a frontier which directly marches with Afghanistan, and an area in which we accept responsibility for the behaviour of all within that boundary. It was a far more accessible country than that to the North with tribes who owed allegiance to chiefs that could assert authority.

The tribal risings of 1897, brought on by the successes of Turk over Greek, by the rolling of the drum ecclesiastic and by tribal discontent at our protection of the trade routes, took 60,000 troops to suppress. Then Lord Curzon came to the Viceroy's throne to find large military forces costing vast sums still holding posts across the administrative border. He introduced an extension of the older systems, by removing garrisons and encouraging the tribesmen to enlist in local militia corps to maintain order. These local forces were supported by military bodies of all arms located clear of the hills to uphold the militias. This system aimed at continuity, and at freeing the bulk of the Army to be employed for its legitimate purposes, the major defence of India. Nevertheless, military expeditions were still necessary to punish certain of the tribes, notably those of Waziristan, for constant acts of entirely uncalled for hostility. Yet it was felt that nothing would justify us in the bloody and costly policy of taking over the hills of Roh, at the expense of the Indian taxpayer, and endeavouring to make a civilized and peaceful country up to the political boundary of Afghanistan.

### THE WORLD WAR AND AFTER

The Curzon policy, despite the many lapses from its principles resulting from the behaviour of the tribes, held the field with increasing success till the days of the World War. The peaceful penetration of our amenities was slowly and steadily bearing fruit, though it was perfectly well known to our frontier officers, that the fanatical keyboard of tribal

enthusiasms was one on which the Amir of Kabul could and did play at will. The World War with the call to Jihad from the mosques and minarets of Turkey, found a ready echo on the border. "Allah! Allah!" shouted the priests and the hearts of the tribesmen stirred. Habibullah, Amir of Kabul, was our staunch ally, and without his support we should have had the whole border on our hands. As it was, except for the perennial sore of the Mahsud Waziris, we were fairly free till 1919, when Amanullah launched his mad outrage to the tune of the Indian revolutionary, bringing the tribesmen of Roh in his train. That destroyed all the careful building up on the foundation of the Curzon policy. A two years' war in Waziristan followed the defeat of the Afghans by our half-demobilized Army.

It was decided at last to put a cantonment of ever-ready troops in the heart of Waziristan and on the plateau at Landi Kotal above the Khaiber, to bring the broad gauge railway to the same spot, and to render the troops on the frontier so highly mobile that they should be able to withstand any repetition of Afghan aggression or any blaze in the frontier hills at any season of the year, while the less prepared army behind carried out its mobilization. That indeed is the proper condition for all frontier troops. It was now to be the condition for a considerable body.

The defeat of the Afghan invaders first brought the Royal Air Force in some numbers to the assistance of the troops. Since then the organization and equipment of that Service has been much advanced, and it exists in considerable strength on the frontier of India. Its daring and efficiency was, as all the world knows, most spectacularly displayed in the evacuation from Kabul of most of the Europeans and Indians at the time of the Amanullah débâcle.

Since those days the position on the frontier has remained much the same. The occupation of the cantonment of Razmak in the Waziri country has had remarkable results. With it went the policy of a circular motor road through the heart of the country from Bannu in the North to Tank further South. The use of the road has brought many ideas as to civilization and its advantages. It has definitely brought the fear of instant reprisals to the great hotbed of tribal disturbance. The founding of the cantonment has the disadvantage of locking up part of the regular Army, but this no doubt is compensated for by the advantages quoted, and the protection it affords to the cultivators of the administered territory. It is to be remembered that since the World War the frontier tribes are saturated with modern rifles, and that the raids were taking the shape of actual invasions carried out with tactical skill by men trained in our own forces, and some measure of protection in advance of that hitherto attained was essential to the prestige of Government.

The new conditions saw large, highly trained and mobile forces at Quetta and Peshawar, both of which may safely be described as the most efficient frontier troops in the world, and with them several squadrons of an Air Force second to none. It is a sad reflection that this summer these two forces should have been made a laughing stock, and many of their valuable lives lost, when a few hundred vagabonds from the Afridi hills were allowed to invade British India for the first time in history with impunity, owing to astounding collapse of local civil authority added to as great an outbreak of hesitation at the seat of Government.

### THE ROYAL AIR FORCE ON THE FRONTIER

Before studying the problem of frontier "police," a phrase which is nearer the mark than frontier "defence," it will be well to consider the functions and limitations of the Air Force under such conditions.

The coming of the Air Force changed many of the conditions on the frontier. In an hour or so it was possible to test the truth of reported tribal gatherings by soaring up the valleys in question. The tribes for the first time in their imagination were being "overlooked." An unprovoked raid could receive as reply the prompt riposte of the bombing plane, and the wild young men began to think twice. "Young men must live, and gorbellied knaves with fat purses are fair game," as Falstaff said at Gadshill; such are emphatically the sentiments of the tribesmen, but a short sharp bombing reprisal would make the young men who provoked it unpopular with their tribe and their elders. Undoubtedly a new factor of great value had arrived. In their first enthusiasm officers of the Royal Air Force talked of taking over frontier defence. Before long, however, the limitations of air troops became obvious. The tribesmen are quick to adapt themselves; puggaries and blankets draw innocuous fire while the owners hide near by. The dropping of bombs and the rattle of machine gun fire among the up-ended strata of the ridges are terrifying but not very harmful, and their effect has to some extent waned. Tribesmen who shelter in caves, as so many of them do, are no more pervious to bomb dropping than they are to artillery fire. The bayonet and the hand grenade alone cure that complaint. So it has now been borne in on all the enthusiasts that air action alone will not improve the situation materially. There is another difficulty, the bomb once dropped on villages, towers, and kirris may harm women and children. To send previous warning is but to render your own sting innocuous. It has also been said that the infringement of the old mutual custom of not molesting women folk, which has been noticeable of recent years, after seventy years of immunity in outrages on European families in frontier cantonments, is due to the breaking of the old convention that may be inherent in bombing.

During the late invasion of the environs of Peshawar by Afridis, the Royal Air Force could and should have taken effective action by attacking the war-gatherings on the border. They were restrained by authority from doing so until the invaders had passed the vulnerable stage, and had dispersed amid the ravines, high crops, and orchards of the valley, when they were not only almost immune to air action, but it was very difficult even for the troops to act against them with any effect. So do weapons turn to dust in the hands of the timorous and hesitating. Having endured, with some ignominy, the impudent invasions of the Afridis, the Government had now to face the problem afresh, and with it perhaps study the whole question again. not used their magnificent force when it could have helped them. How, in future, could they make better use of it and their troops? The answer, of course, is that it is no good trying to make better plans and employ better resources if you have not the character to use the perfectly good and up-to-date machinery already to your hands.

#### FRONTIER DEFENCE IN THE FUTURE

Assuming, however, that the Government of India is aware of its failure, is honestly purporting to do better in future, and that it is going to consider the matter further, there is of course no more to be said. Military expenditure is heavy, and each year new equipments and requirements call for more. Possibly the Covering Force is needlessly large; it was carefully thought out a few years ago. Possibly the Air Force can give better protection with less troops; perhaps it can, if authority is strong enough to use it. But it has just been shown that the limitations in the peculiar conditions existing are considerable.<sup>1</sup>

The force at Peshawar is now engaged in carrying out the barest modicum of action against the Afridis. It is making roads within our administered border; it is occupying certain ground on which the Afridi clans are allowed to graze and camp in winter; and it may be instituting a permanent post from which raiders can be attacked; not very complete and heroic measures. It is probable that the Afridi inroad really demanded a sharp invasion of Afridi strongholds. There is an unjustifiable bogey in some Governmental cupboard which says that the Afridis are ill cattle to drive and that it is as well to keep out of Tirah, judging by the history of the expedition of 1897. But that expedition was undertaken by troops largely untrained in the cult of frontier warfare, which dates from that period, and they were also badly

<sup>&</sup>lt;sup>1</sup> The Government of India has appointed a Committee to examine the existing system of tribal control and defence against tribal risings on the North-West Frontier. See General Service Notes, p. 180.—Editor.

equipped for the purpose. The exact opposite is now the case. The frontier troops are now quite capable of entering Afridi land with impunity if need be. To do this, however, would be costly at a time when the Government is hard pressed financially. The lesser course advised was an intermediate one, namely, to copy the action which is proving so successful in Waziristan, and drive a circular motor road through part of the Afridi country. That would contribute towards the permanent advancement of peace and civilization in Afridiland. At present only the very first step towards such a policy, that of carrying a motor road to our own border, is in progress.

Every motor road driven into the hills is a step towards importing civilization and the ways of peace. Until time and roads shall gradually spread peace up to the Afghan border, there is no main solution of the Lesser Problem of Indian Defence. The frontier troops must be prepared to repel and follow up attacks, the local militias which themselves are apostles of civilization should carry as much responsibility as they can. The covering troops and the Air Force must share the work to the extent of the capacity of each arm.

It is possible to say that the existence of unrest in the frontier hills is a sad illustration of British failure after eighty years of responsibility; but the facts enumerated in the historical outline refute this. Civilization could only have been attained by the sacrifice of many British and Indian lives, and the money of Indian taxpayers, without hope of return in kind. There is of course an argument which says that had the total of money and lives spent in eighty years of frontier protection been pooled at once, complete pacification could have been attained at half the price; possibly, but looking ahead in this manner is often outside practical politics. The work must go on much as now, and with the same implements, the road policy being always kept to the fore. Following the roads, the travelling dispensary will bring golden returns. So much for the Lesser Problem. A word or two of the real defence of India will suitably close this discussion.

#### MEETING THE MAJOR PROBLEM

The real defence of India is quite a different problem, as has been shown. If Afghanistan is our ally, then the problem is driven into certain definite lines by the geography of the country. The Hindu Kush is an impassable barrier to modern armies of any strength until it tails down to lower heights and passes near Herat.

Afghan troops with some assistance have always been considered enough to bar the high passes leading to Kabul. The invader must still come into either country via Herat, to be met by the allied defenders

somewhere between Herat and Kandahar. It is for this reason that the great military developments on the Ouetta plateau have taken place in the last fifty years, and are still being improved. The actual form of operations need not be discussed, but it may be remarked that the coming of the motor lorry makes easier the problem of invasion as it does of defence. It follows that, if Afghanistan should again be the enemy, the defeat of her armies and their pursuit to her capital would be a far simpler matter than formerly. The invasion of India by Russia, with a neutral or hostile Afghanistan, would be a combination of which the repulse would make a considerable demand on the Empire's resources, and yet it would probably end in such a complete defeat of the invaders as would end any desire to repeat it for a hundred years. As it is, forethought and reasonable preparation are all that is required; without them the result might be supreme disaster, with all the clans of the Suleimans and the mountains of Roh pouring down once more to the sack of India:-

"And far from the Suleiman heights comes the sound of the stirring of tribes;

the employment of three cavado

Afridi, Hazara, and Ghilzai; they clamour for plunder or bribes."

considerable public outrry arose against such vist expectation

Hard Bowerspace concern to nevertheless, bollock them force were to be a winning for the maintenance or miseral christs

burshed and a resource of hands to be bound from our provisional

Royal Air Force, only malled by contact with goal conditions accepted

# EIGHT YEARS OF BRITISH CONTROL IN IRAQ

By "JUNDI."

By the provisions of the latest Treaty, Iraq is solely responsible, as from the date of entry into the League of Nations, for both internal order and defence from external aggression, so that British responsibility in these respects will probably disappear in 1932.

The record of British defensive measures in that country for the past eight years is, therefore, at the moment of particular interest.—EDITOR.

THE insurrection in Iraq 1919–20 was wide spread, and involved the employment of three divisions and two air squadrons—some 65,000 troops all told—and its suppression cost the Imperial Exchequer close on £100,000,000. It was not unnatural, therefore, that considerable public outcry arose against such vast expenditure. This, coupled with the success achieved in Somaliland, Aden and the Sudan induced the Government of the day to try the bold experiment of establishing a National Government in Iraq and of placing the defence of that country under Royal Air Force control. The estimate for a scheme of Army control was £10,000,000 annually; that for Air Force control was only £4,000,000. The latter did not, however, include expenditure on the maintenance of the Iraq army, and of the police, which were an Iraq Government concern; nevertheless, both of these forces were to be available for the maintenance of internal order.

The suppression of the 1919-20 insurrection had been carried out with some severity, and the lesson had been salutary. This fact, combined with the establishment of a National Government in 1922, rendered the possibility of a recrudescence of internal disorder on a large scale remote. The only area which might still give trouble was Kurdistan. It is possible that in framing their scheme the Army authorities were greatly influenced by their recent experience in the insurrection, and, being unwilling to take risks, over-insured. On the other hand, the Royal Air Force, untramelled by contact with past conditions, accepted the risk of reducing the defence forces to a minimum. In any case, the soundness of the latter appreciation appears to have been borne

out by the results of the past eight years. It must be noted, however, that the test has not been severe, because during that time there has been no serious internal or external opposition to contend with.

A comparison has often been made between the £20,000,000 military budget and the present £1,500,000 budget of the Royal Air Force in Iraq. The comparison is neither comparable nor just. Whilst the former figure represents the cost of maintenance of the considerable military forces which were necessary immediately after the insurrection, the latter figure represents the cost of maintenance of the present four (Bombing) Squadrons, one (Flying Boat) Squadron, one Armoured Car Company, and two Battalions of Iraq Levies. It does not take into consideration the cost of maintenance of the Iraq Army, 10,000 strong, or of the Iraq Police, 8,000 strong, both of which are maintained by the Iraq Government, and on which the R.A.F. largely rely for the defence of their aerodromes and bases, as well as to provide the bulk of the columns required to co-operate with air operations. These troops, numbering some 18,000 all told, are the mainstay of the ground defence, and are hardly a negligible factor in the situation.

In 1922, when the Air Ministry assumed control, besides the eight R.A.F. Squadrons the military forces consisted of :-

I Brigade Infantry:

4 Armoured Car Companies;

I Pack Battery;

all Imperial troops. In addition, the auxiliary forces-Iraq Levies, Iraq Army and Iraq Police—composed of cavalry, artillery and infantry, numbered some 15,000 all told, or a total available strength in troops of some 20,000.

With the progressive expansion of the Iraq Army and Police, and the elimination of the acute frontier question with Turkey, it was possible to reduce gradually all Imperial commitments, until to-day the strength of the Imperial Forces in the country stands at the aforesaid figure, viz., four (Bombing) Squadrons, one (Flying Boat) Squadron, one Armoured Car Company and two Battalions, Iraq Levies.

The Iran Government Forces, which assist in the maintenance of internal order and are placed at the disposal of the Air Officer Commanding for operations are:—

I. IRAQ ARMY.

3 Cavalry Regiments;

3 Mountain Batteries (two 2.75 guns and one 3.7 how.);

2 Field Batteries (one 18 pdr., one 4.5 how.);

I Motor machine gun company;

and the usual ancillary services, including a M.T. company of light six-wheelers, a total of some 10,000 troops all told, armed and equipped on the Indian scale.

II. IRAQ POLICE.

I Mounted Division;

I Dismounted Division;

I Motor Unit (30 vehicles armed with Vickers and Lewis guns);

I Desert Camel Force.

This body is well equipped, and is more in the nature of a gendarmerie than a police proper. The total strength is approximately 8,000 all told.

It will thus be seen that the total military forces which the R.A.F. have available to assist in maintaining both internal and external security is approximately 20,000; so that while the strength of the military forces has not been materially altered within the past eight years, Imperial expenditure on security services has been reduced, whilst that of the Iraq Government has correspondingly increased. These facts should be noted when comparative costs are discussed. It should also be borne in mind that in this region controlled by the Royal Air Force it has been found necessary to back the air squadrons by no less than 20,000 troops on the ground.

Now let us turn to the series of operations which have taken place during the term of control. It will have been seen that whilst the possibility of any grave disorder in the plains of Iraq was remote, the situation in Kurdistan was far from satisfactory. For the two years prior to 1922, Rowanduz—the head of the gorge through which the mountain tracks from Turkey and Persia lead into Kurdistan-had been in occupation of a Turkish detachment, and another detachment was actually posted at Koi-Sanjak, seventy miles within the Iraq border. At that time our relations with Turkey were seriously strained for other reasons, and the Turks had accordingly been reinforcing their garrisons along the Iraq border line. It was calculated that they could put several divisions across the frontier in a few weeks, against which there were now available only the R.A.F. squadrons and the 20,000 troops already enumerated. Mosul, which was likely to be the first objective of the Turks, was garrisoned by one Indian battalion, two batteries, one armoured car company, one squadron R.A.F., and Iraq Levy and Iraq Army detachments. It was, therefore, dangerously exposed. A Turkish incursion in force, however, was unlikely for the following reasons. The main line of approach is by the Konia-Aleppo-Nisibin railway, and thence down the Tigris valley to Mosul. But Aleppo lies within French mandated territory, and for obvious reasons Turkey

did not wish to draw both France and Britain against her simultaneously. The other approaches lie to the North, but consist of precipitous bridle tracks over the high mountain mass of Kurdistan. The scene of operations was far from the military centres; the communications over mere mountain tracks were precarious and exposed to danger of attack by the Kurd, who looks upon Turkey as his traditional enemy. Turkey at that time was vulnerable elsewhere at Constantinople, in the Straits, in Thrace, at Smyrna and many other points, so that a momentary success on the Iraq border would be offset by the possibility of a more serious enemy attack nearer home. So long as the Franco-British Entente remained a living force such a project as an attack on Iraq was too dangerous, and the small Turkish military movements on the frontier were more in the nature of bluff than anything else. It is also now an open secret that the possible menace of an Italian invasion of Anatolia had a restraining effect on Turkish ambitions.

None the less the situation was delicate, and Air Headquarters considered the question of either withdrawing from Mosul or reinforcing it and attacking the isolated Turkish detachments at Rowanduz and Koi-Sanjak. The Air Officer Commanding boldly decided on the latter course.

Throughout the winter the Turkish posts were bombed from the air and for a hundred miles along the frontier, whilst Mosul was reinforced and the command entrusted to Brigadier-General Berkeley Vincent. The latter kept his small force so actively employed that rumour declared it to be far stronger than it really was.

In the meantime Sheikh Mahmoud, the Kurdish chief of Sulimaniyeh, began to give trouble. Although this tribal concentration was comparatively small, his territory lay to the right rear of any British advance towards Koi-Sanjak. The line of communication was, therefore, endangered. It was impossible to deal simultaneously with the Turkish menace and Sheikh Mahmoud. The A.O.C., therefore, decided to pin the Turkish detachments to their posts by air action, whilst he concentrated against Sheikh Mahmoud. The actual operations were carried out by two columns of troops and were completely successful. Aircraft proved of the greatest assistance, as they enabled the A.O.C. to co-ordinate personally the action of the two columns, while at the same time keeping in close touch with events in the Mosul area. Subsequently, on the approach of Berkeley Vincent's column up the Rowanduz gorge, the Turkish garrisons at Koi-Sanjak and Rowanduz withdrew across the frontier.

In the years between 1923 and 1927 the establishment of civil administration was pushed forward by the aid of military force. Small

ground columns supported by aircraft penetrated the valleys and held the area, whilst the police posts were being constructed and the civil administration established. This process of infiltration, however, was not allowed to proceed without fighting; but the opposition was never very serious, nor anything but on a minute scale.

In the spring of 1927 Sheikh Mahmoud again became active, and it was decided to seize his stronghold at Penjwin. Two columns were concentrated at Sulimaniyeh for the purpose. An interesting feature was the transportation by air from Baghdad to Sulimaniyeh of supplies for the Levy Column, consisting of two companies of infantry. This was necessary in order to maintain secrecy which is impossible where the movement of supplies is normally carried out by local contractors. The Levy Column was to advance by an alternative and shorter route twenty-four hours after the departure of the Iraq Army Column. Secrecy was maintained, and the plan worked admirably. In the neighbourhood of Nalparaz the Iraq Army Column became involved in a sharp rear-guard engagement; the artillery, however, never came into action, and the co-operating flight of planes, unable to realize that a fight was in progress, took no part. Arrangements were then made for air co-operation on the following day, when the formidable Kani Manga pass was to be forced. The engagement began in the early hours, and the flight, unable to find suitable targets owing to the extensive growth of scrub oak, bombed the areas indicated by the bursts of shell from the battery. In the meantime, the Levy Column, which during the night had occupied Penjwin unopposed, made a forced march and took Sheikh Mahmoud's defenders in the rear and put them to flight. The above description is typical of fighting in the Kurdish mountains. A curious feature was that whilst the Kurds as a whole expressed their determination to resist the establishment of civil administration by the Iraq Government, they did not present a united front. One tribal section in active revolt was seldom if ever supported by the remainder of the tribes, and armed resistance was never widespread. Hence the localization of areas of disturbance, which considerably eased the military aspects of the problem. Other features were that the main tasks were carried out by the troops assisted by aircraft, while the action of columns were often co-ordinated from the air.

In the Autumn of 1927 the scene of military activity was transferred to the South-West desert along the Nejd border. The desert frontier is an arbitrary one fixed at the Ojair Conference, 1922, and one clause of the subsequent protocol of the Mohammerah Agreement laid down that neither side should use the well-bearing areas on the limits of the frontier for military purposes. But from time immemorial the Bedawin

have been accustomed to roam the desert in search of grazing irrespective of frontiers. In lean years, however, the desert grass becomes parched for lack of rain, except in the small areas round the wells. Hence these become the scene of inter-tribal strife. Raiding amongst the Bedawin, therefore, can almost be said to be endemic as well as an economic necessity. Constant tribal bickerings induced the Iraq Government to extend the civil administration to its portion of the desert. To effect this purpose it decided to construct a series of police posts on these fertile areas well within the frontier.

The control of the desert naturally did not appeal to the tribes across the border, who felt that their freedom of movement was in danger. Busseyah, the first post in the chain, lies about seventy miles within the border, and was in course of construction when it was raided by some hundred Mutairi under their chief, Faisal-ad-Dawish; the police detachment was wiped out, and the neighbouring Iraq tribes robbed of their flocks. Similar raids followed in rapid succession, and the Iraq tribes suffered considerably, as they were unarmed. A remonstrance addressed to Ibn Sa'ud drew forth the reply that he was unable to assist, as his Mutairi tribesmen were out of hand; but at the same time he considered the construction of forts in the desert contravened the Mohammerah Agreement. As a result, relations between King Faisal and Ibn Sa'ud became even more strained, and it was only diplomatic action and the traditional friendship between Ibn Sa'ud and Great Britain which stayed his hand.

The defence of the desert had previously been placed in the hands of the A.O.C., and a series of military posts garrisoned by the Iraq Army were established in the well areas at Busseyah, Nuqrat-Salman, Subaicha, and, in the following year, at Nukhaiyib. Each post was situated about a hundred miles from its neighbour. Briefly, the objects of these posts were:—

- (a) To deny the main water-bearing areas to raiders;
- (b) To provide for rapid dissemination of information;
  - (c) To provide protection of advanced landing grounds from which forward detached flights and mobile military units could operate.

The Basrah garrison was reinforced and a line of concrete block houses was constructed to cover the Zobair gap, whilst a brigade group of the Iraq Army was held in readiness at Baghdad to move at short notice to any threatened point on the railway line between Baghdad and Basrah. Advanced Air Headquarters was established at Ur Junction, where the Air Commander controlled a striking force of three bombing

squadrons, six sections armoured cars, and a motor machine gun company of the Iraq Army.

Detached flights and armoured car sections at the posts were supplied and maintained by M.T. convoy and a squadron of Victorias, whilst the Iraq troops in the posts and the motor machine gun company were supplied with difficulty by weekly M.T. convoys, as no staging sections could be organized on the waterless desert communications. The average distance of the posts from their respective railheads was eighty to one hundred miles. In spite of these measures the raids continued, and in every case but one effected their object without much loss.

The approach of summer put a stop to the operations. During these months the relief of troops in certain posts was carried out by air. In the Autumn of 1928 raiding commenced again, but not on the previous scale. By this time the greater portion of the Iraq shepherd tribes had been withdrawn to the Euphrates, and the chance of raiders penetrating deeply into the interior behind the line of posts and getting out again without damage soon forced them to seek more profitable pastures.

Faisal-ad-Dawish then turned his attention to Koweit territory, and even to the interior of Nejd. R.A.F. activities were then transferred to Koweit, but the raiding continued with almost uniform success. Dawish's depredations in Nejd, however, brought him into direct conflict with Ibn Sa'ud, and in the Autumn of 1929 he was defeated in a general engagement. He and his followers sought asylum in Iraq, but were turned back from the frontier; they then settled in Koweit, but there the combined action of aircraft and armoured cars were on the point of driving them back across the border into Ibn Sa'ud's expectant arms, when Dawish gave himself up to the British rather than face the consequences with his overlord. This ended the two years' operations in the desert.

Although the desert is eminently suited to air action, several reasons militated against its complete success. The lessons to be drawn from these operations appear to be:—

- (a) The length of the frontier to defend was some 450 miles, and this proved too extensive for the number of available aircraft.
- (b) Over so wide a front information of a successful raid invariably arrived too late to give an opportunity for effective action.
- (c) To pick up a small raiding party in a featureless desert is an extremely difficult task.

- (d) For the reasons given above, mobile land forces were seldom able to co-operate.
- (e) Raiding parties were small and extremely mobile, and to differentiate between friend and foe from the air is often impossible.
- (f) Air action is transitory, and the raiders have gradually learnt to disperse on the approach of aircraft, concentrate again when the latter have left, collect the scattered loot and continue the march.
- (g) Loot cannot be recovered without the co-operation of ground units.

Such is the record of British control in Iraq since 1922.

are an entered as some allowable as

considered to productions and that the term contributed to the period of between the that from a large to the large to that the contributed to the

realized of the capitate of section, using territor one progression in the land of the contract of the contrac

the return of the entire and the entire the entire of the entire of

# REGIONAL CONTROL AND THE CO-ORDINATION OF AIR AND LAND FORCES

By MAJOR R. H. L. FINK, O.B.E., M.C., The Royal Scots.

THE question is not infrequently asked: "What is the meaning of the term 'air control?'" Sir Henry Dobbs has defined it to be such that in the selected region the Royal Air Force shall be considered the predominant arm, and that the general control of all forces in that region shall lie with Air Headquarters, in consultation with representatives of other forces employed, whether naval, military or police.<sup>1</sup>

The formation of an independent Air Force and its steady development as a separate Service have, not unreasonably, led to that arm claiming a more active part in general police work in the distant parts of our Empire; work which had previously been almost exclusively confined to the Navy and Army. Unfortunately, this very natural desire has led to a certain amount of inter-Service rivalry, which, unless remedied, is bound in the long run to affect adversely that whole-hearted co-operation which is so necessary in war.

The air arm is a spectacular weapon and extremely attractive by reason of its rapidity of action, long reach and generally acclaimed cheapness, especially so in its dealings with the more undeveloped and unruly elements of our Empire; but the claims as to its capabilities made by enthusiasts have, on occasion, been so extravagant that they have seemed to lack justification. Nevertheless, the Royal Air Force has now for some time been entrusted with the responsibility of policing selected territories, whilst elsewhere aircraft have co-operated with other forces under Army command in similar work. To-day, therefore, it is possible to review the activities of this new arm over the greater part of a decade, and to judge of the extent to which aircraft have made good, and how far experience warrants their being substituted for the older methods of control.

But the policing of territories is a peace-time duty, and if any changes are to be made in the responsibilities of the several Services for performing

<sup>1</sup> See Correspondence in "The Times," 8th May, 1930.

it, they should take into full account the relationships of those Services, one with the other, in the event of war. While studying the present day methods of controlling territory, therefore, it seems relevant also to remark on the existing system for co-ordinating the use of aircraft and and land forces, generally.

Briefly, the Royal Air Force has operated as the controlling authority for police work in Iraq, Palestine and Aden; while air squadrons have co-operated with the forces under the Army commands on the North-West frontier of India and in Somaliland. It is proposed to make a short survey of the combined activities of the air and land forces in each of these localities:

# IRAQ.1

The assumption of military authority in Iraq by the Air Ministry immediately followed the very effectual suppression of the 1919-20 insurrection, so that, during its period of control, the Royal Air Force has not had to contend with any notable internal Arab disorder.

In 1922 conflict with Turkey appeared imminent over the question of the Mosul frontier, while both Rowanduz and Koi-Sanjak within the Iraq border were occupied by small Turkish detachments. Intense bombing of these small garrisons from the air did not dislodge them, and they were able to maintain their positions until threatened by the advance of Brigadier-General Berkeley Vincent's column up the Rowanduz gorge.

Whilst Mesopotamia proper remained comparatively tranquil, Kurdistan was still an area of minor disturbance. The Kurd has from time immemorial maintained an independent attitude, and he intensely resented the establishment of Arab administration in his mountain areas. His chiefs did not, however, present a united front, and the opposition was merely local and on a very small scale.

During the period 1922-27 these localized outbreaks were dealt with by small columns combined with air co-operation, and the actions of the columns were often co-ordinated from the air.

Between 1927 and 1929 Royal Air Force units, assisted by armoured cars, machine gun M.T. units of the Iraq Government forces, and the static Iraq Army garrisons of the frontier posts, were engaged in an unsuccessful effort to stem the numerous raids of Ikhwan tribesmen from across the Nejd border line, in the course of which the unarmed Iraq shepherd tribes suffered considerable loss of life and property.

<sup>1</sup> See also "Eight Years of British Control in Iraq," p. 10 of this Journal.

For two years the raids continued with uniform success, and the recalcitrant tribesmen were not brought to book until defeated in a general action in Nejd territory by the Wahabi King Ibn Sa'ud; they sought asylum in Koweit territory, and eventually gave themselves up to the armoured car units co-operating with the air squadrons.

The reasons for this failure are not far to seek. Early intelligence of an impending raid was seldom available in time to enable aircraft to take immediate action, and small raiding parties are extremely difficult to locate in a featureless desert extending over some 500 miles of frontier. The proper answer to desert raiding is counter-raiding by aircraft, armoured cars, and troops carried in M.T. vehicles, but for other reasons this action was denied to the forces at the time.

In considering the question of the "predominant arm" it is interesting to note that to-day the four bombing squadrons and one flying boat squadron are backed by no less than 20,000 troops of the Iraq Levies, Iraq army and Iraq police (a gendarmerie), besides its own armoured car company. To these troops are entrusted the garrisons of the frontier posts and the provision of those punitive columns, without which the Royal Air Force could not fulfil its task. It should also be noted that, to the comparatively small cost of maintaining the Royal Air Force and the Levies units in Iraq, should be added the additional charges of maintaining some 18,000 men of King Faisal's forces, which are not a charge on the Middle East Vote of the Air Force Budget.

The question has often been asked whether the present British forces in Iraq would be capable of controlling the country were a determined insurrection such as that of 1919–1920 to break out again. The consensus of opinion is that it would not, and that large reinforcements of troops would be required before it could be quelled. Under such circumstances the controlling authority would inevitably pass to the Army.

# PALESTINE.

Turning to Palestine we find that the promise of "air control" was so great that the garrison was gradually reduced, in spite of protest from other quarters, to the negligible quantity of a few hundred policemen. But when riots broke out, aircraft rendered very valuable service by carrying infantry to the danger area from Egypt, and by doing so largely restored public confidence; but in the meantime British authority had been flouted throughout the land, and massacres had been perpetrated which the local aircraft were unable to prevent. In fact, except as transports, aircraft failed in this serious emergency, not in individual performance, but in fulfilment of the extreme claims of their supporters.

It has been stated by Air authorities that Palestine does not provide a suitable example, as it involves the maintenance of order in towns and populous districts between rival religions and factions, work for which the Air Force has never claimed suitability. It should, however, be recognized that this is the very task which our military forces are so often called upon to perform in other parts of the Empire, especially in India. It has also been stated that Air methods are the reverse of the old punitive column. Air policy is one of prevention, not only of punitive action. In certain respects this is an established fact, but it is equally true that in Iraq air action alone brought no decision against the Kurdish sheikhs or the Ikhwan raiders, and that co-operation of military forces was necessary to gain decisive results.

# ADEN.

Air action for the defence of Aden was described in detail by Squadron-Leader Cochrane in his recent lecture. No further comment need, therefore, be made except to emphasize the success achieved by aircraft operating in conjunction with a very small force of troops.

The results have been eminently satisfactory, expeditiously carried out, and at small cost. But mark the conditions: these actions all bear the same imprint. The sphere of operations was localized and their areas were small, targets were well defined and the disaffection not widespread.

# NORTH-WEST FRONTIER OF INDIA.2

Experiences of the employment of aircraft on the North-West frontier of India have been very similar to those described elsewhere. In the Afghan War of 1919 the very determined resistance of the Indian Army to the Afghan advance, combined with the bombing of Kabul from the air, led the young Amir to terminate hostilities. Elsewhere on the frontier air action has shown that it obtains its maximum effect against localized minor tribal gatherings out of reach of the ground garrisons. In such circumstances the recalcitrant tribesman has no retort. While he is denied the opportunity of raiding the distant military garrisons, his home villages are made uninhabitable by constant air raids, and he is eventually forced to submit. Thus the operations are brought to a termination with the utmost speed, with the minimum of effort, and at slight cost.

But where such conditions do not exist, and where disaffection has been widespread and opposition determined, the independent action of

<sup>1</sup> See p. 88 of this Journal.

<sup>&</sup>lt;sup>2</sup> See also "The North-West Frontier of India," p. 1 of this Journal.

aircraft has not achieved notable results. The most recent disturbances in the neighbourhood of Peshawar provide an excellent example. Neither the independent action of aircraft nor the defensive action of the military garrisons in the outposts has been successful in preventing the infiltration of rebellious tribesmen into the Kajuri Plain, and combined offensive operations have been necessary to drive the *lashkars* back to the foothills. Without a considerable military garrison to defend Peshawar the action of aircraft could not have saved the city from Afridi occupation.

Before passing to a survey of other regions it is interesting to note a departure from the principle of military control in this area. In India the Army is the predominant arm, and the Commander-in-Chief is responsible to the Government of India for the defence of that country and for the co-ordination of all efforts to attain that object, yet in order to guard against the improper employment of aircraft the Air Officer Commanding has access to the Viceroy without reference to the Commander-in-Chief. This system of dual advice has its immediate effect at Peshawar, where the Commissioner is advised independently by the respective Army and Air Force Commanders. Under such a system co-ordination must be difficult, and active co-operation lacking. Its dangers are self evident.

#### SOMALILAND.

In 1920 aircraft co-operated with military forces in the operations which resulted in the defeat of the Mullah of Somaliland, who, owing to his isolation, had for some considerable time defied authority. The main lessons of these operations were the value of aircraft in co-operation with troops in savage warfare in open terrain, and the grave disadvantages of non-co-ordinated air action.

#### AIRCRAFT AS AN AID TO CIVIL ADMINISTRATION.

With some show of reason it has been claimed that the employment of aircraft is a great civilizing influence, in that by their mobility and long range they enable a close touch to be maintained between political officers and outlying tribes, but it may be noted that this service could be performed equally well by aircraft under civil or other forms of control. It must be remembered, too, that aircraft, acting alone, cannot enable political officers to visit hostile areas.

# SUMMARY.

Now what are the lessons that can be drawn from this survey? It seems that independent air action has not led to decisive results. The air arm has, however, demonstrated its very great value as an economical auxiliary to military forces, partly by its speed, range,

and the secrecy with which its actions can be controlled, and partly from its value in the transport of troops and stores, and its low cost in the conduct of minor operations.

On the other hand, events in Palestine and the more recent occurrences on the North-West frontier of India indicate that the restraining effect of air police work is not so great as was at first anticipated. The air arm is essentially an offensive weapon, but it has a poor protective or defensive capacity. Its action is also transitory.

The maintenance of so large a force in Iraq would appear to indicate that the effectiveness of "air control" is primarily dependent upon the existence of strong mobile forces of troops, while its ability to deal decisively with determined and widespread disturbance has not yet been demonstrated.

The control of disturbed areas must still be entrusted in the main, therefore, to military forces. Nevertheless, aircraft employed to the best advantage in conjunction with those forces are likely not only to speed up the operation, but also to reduce its ultimate cost.

The want of co-operation due to the present dual control system on the Indian frontier is a source of real danger that needs no particular stress. Divided responsibility can never succeed, and it would appear that one of the chief lessons of the Great War has not yet been sufficiently emphasized.

#### CO-ORDINATION OF MILITARY AND AIR FORCES.

A discussion of the respective merits of any one particular arm to control a given situation can lead to no definite conclusion; the problem is rather one of evolving the best and most economical method, which will generally mean co-ordinating the action of various weapons in their right proportions. The advent of aircraft has added another and very potent weapon to the military armoury. Without aircraft neither the sea nor the land forces can develop their full power. Aircraft are, therefore, as necessary an adjunct to the Navy and Army as are light cruisers, destroyers and submarines, or cavalry, artillery and tanks. The closest co-operation is, therefore, essential.

But the Royal Air Force has not only to be responsible for defence against foreign air aggression, but is also charged with the task of providing both the Navy and the Army with their air weapons. The result is a multiplicity of tasks which, in a major war, might well lead to a dissipation of force and loss of efficiency all round. For the moment, however, it is the subject of control which we are discussing. As matters stand, it resolves itself into a question as to which is the predominant

arm; yet if the most efficient and economical means of conducting war are to be found, there must be no overlapping in the process of administration of the fighting forces.

The respective functions of the two older Services are definite, and there is little likelihood of such overlapping except in combined operations, and even in such operations their respective responsibilities can be clearly defined.

It is said that the primary task of the Royal Air Force is to maintain the freedom of the air, which implies air superiority; but without in any way disregarding the immense importance of an efficient home air defence, since man lives on the land, and to a lesser extent on the sea, the ultimate issues of war must be decided on these elements. They cannot be decided in the air alone. Air attack of such targets as the enemy's nerve centres of government, his war industrial areas, his aerodromes, his land, and sea communications, docks, and fleet bases, is immensely important, but such operations are inseparable from military and naval strategy, which embrace the employment of every available weapon, whether it be operated from the land or from the sea or from the air. The primary role of aircraft is, therefore, to co-operate in the attack or defence of land or of sea objectives, and air combat can only be incidental to the accomplishment of the main task.

Unrestricted competition between the Admiralty and the War Office in the market for production of aircraft during the War, led to the formation of the Air Ministry. The effect of that decision has been to deprive both the Navy and the Army of a full knowledge of the potentialities of a weapon very necessary to their fighting efficiency, and to confine its study to a watertight compartment. This isolation of the air weapon inevitably tends to formulate a strategical and tactical process peculiarly its own, although its primary functions are intimately associated with the older arms.

Military strategy will undoubtedly demand air action against large scale land objectives, whilst tactical success in the land battle of the future will depend upon the closest co-operation of infantry, artillery, tanks and aircraft. It seems obvious, therefore, that unless the efforts of all these arms are co-ordinated by a single authority, future war will again see that divergence of military policy and dispersion of effort which so nearly led to disaster in the late War. The question may be asked whether the present system of three separate fighting Services affords that close co-operation and unity which are so necessary to success.

The advent of aircraft has destroyed the former isolation of Britain, and, therefore, home air defence must loom very large on the horizon.

For this reason it is probable that neither the Navy nor the Army will receive the fullest co-operation of aircraft until superiority over the enemy in the air has been gained. Home air defence will, therefore, demand a large and special organization to conduct its affairs. But the crux of the question lies in arriving at a proper appreciation of what is the most economical and efficient employment of the various means of force under a single controlling authority. This ideal, however, implies that the controlling staff should possess an intimate knowledge of the potentialities of all the available instruments to be employed. At the moment, such a super-staff does not exist, although much is being done by the training of selected officers of all the Services at the Imperial Defence College; but time is an essential factor.

For the present, therefore, the formation of a combined staff of the three fighting Services to thrash out these questions seems out of the question. But a practical and economical first step might be the rationalization of the Army and the Royal Air Force under single control of the suggested Army and Air Council.<sup>1</sup>

The difficulty of reconciling strategy at sea, and sea training with strategy on land, and land training is fundamental, while the respective tasks and mode of training of the Navy and the Army are entirely dissimilar. This is not so with the Army and the Royal Air Force. The technical training of the soldier and the airman may differ, yet so does that of the cavalry, artillery, engineers, infantry, and the Tank Corps. But both Services are inevitably connected in a common strategical and tactical task. It is essential, therefore, that they should not only speak a common language but thoroughly understand each other's methods and limitations. It is equally essential that they should be imbued with a common doctrine. Moreover, the organization of departmental machinery in both Services is very similar, and their present duplication is uneconomical.

There seems, therefore, a strong case for the Army and the Royal Air Force to be brought under the control of one ministry; each Service preserving its separate identity, but the two being co-ordinated by a combined Army and Air Council. The Fleet Air Arm, which is already mainly naval, would naturally come under the sole control of the Admiralty, instead of being, as now, under the dual control of that department and the Air Ministry.

The development and construction of aircraft might be entrusted to an Aircraft Research Committee organized on lines similar to the Ordnance Committee, but commercial interests should also be represented.

<sup>&</sup>lt;sup>1</sup> See "The Administration of the Fighting Services," Fortnightly Review, July, 1926.

The supply of Service aircraft in peace presents no special difficulty; but any future war on a large scale will certainly necessitate a re-created Ministry of Munitions, which might be responsible for the supply of this as of other warlike material, thus eliminating harmful competition between the Services.

That civil aviation should be controlled as at present by a ministry mainly concerned in the development, training, and administration of a fighting Service is an anomaly, and there seems no reason why these commercial interests should not be entrusted to a section of the Ministry of Transport, working in close co-operation with the Aircraft Research Committee.

Whatever direction future developments may take, closer co-operation between the soldier and the airman is essential, and this can only be effected by co-ordination at the top. The present system, which confines development to watertight compartments and inter-Service competition, is not only inefficient but in war must inevitably lead to friction, and endanger the common cause. On grounds of economy alone a far greater measure of co-ordination is highly desirable.

Under some such system acute controversy as to the suitability of any particular arm or weapon to control a selected region would be impossible. Neither party can truly claim that the other is redundant; or that they alone are indispensable. The fact is that efficient and economical regional control can only be attained by such a combination of arms and their several weapons as will best suit the peculiarities of that region. Here, again, the requisite combination can only be ensured by co-ordination at the top.

mainly naval would naturally come under the sale control of the Admiradty mateur of being, as now, under the deal exerted of their

Definance Compartner, but communical interests about also be represented.

"A good principle, not rightly understood, may prove as hurtful as a bad one."—Milton.

THE principle of Security is not only a good but an essential principle of peace and war, despite the fact that it is very frequently abused, often with disastrous results. Like any other principle, it is abstract in character until we have given it life and clothed it with illustration. In doing this, however, we have to be most careful not to over-emphasize its importance, since it is human nature to violate that very sound saying: "never take counsel of your fears." We have to find the middle way, for too little security in its proper sphere may lead to disaster, while too much "safety first" inevitably means too little vigour, and without vigour we cannot hope to further our affairs, either in peace or in war. My endeavour will, therefore, be to render this principle at one and the same time attractive and repelling, self-assertive yet easily repulsed, ever present to our minds but never absorbing our thoughts to the exclusion of other things.

Many will remember the case of an officer responsible for the security of a harbour who, having lost part of the forces entrusted to him for this purpose, was asked how he proposed to employ the remainder, and replied: "Sir, that is all right; I have hidden them so that the enemy will never find them." This unfortunate officer, doubtless brave and trustworthy in normal circumstances, had, under stress of adversity, sought Security by hiding, an instinct which, we may note, is natural in the circumstances to both man and beast. The episode was an extreme case, but not an exaggerated illustration of the result of allowing considerations of Security to absorb the mind to the exclusion of all else.

To find in naval history an equally convincing example of the opposite policy we must go back over a hundred and seventy years. In November, 1759, Admiral Hawke, becoming aware that his detached squadron under Admiral Duff was in imminent danger of being cut off and overwhelmed by greatly superior force, sent a frigate to warn him

of the danger and with orders for new dispositions to be taken. This frigate, whilst on passage to fulfil her mission, sighted a French ship under jury rig but of some three times her size and force, and went out of the way to attack her. After a fine fight the frigate was reduced to a wreck, her captain was killed, and she was forced to surrender; her mission went unfulfilled, and only a happy chance saved Admiral Duff from the fate that appeared to await him. In this case the captain of the frigate forgot that to achieve his object his duty required him to consider Security first, last, and all the time.

The fact is that there are no precise rules governing the application of the principle of Security, since, as Napoleon tells us, "everything depends upon a thousand circumstances which are never in two cases alike." Bearing this constantly in mind we may consider the principle of Security by itself, divorced from those other principles that qualify its application in every case according to circumstances. Although generally referred to as a Principle of War, we are greatly concerned with its application in peace, so this, also, must be examined. It is, moreover, applicable to internal as well as external national affairs.

#### SECURITY IN PEACE.

When the internal security of the country is threatened to such an extent as to require the intervention of armed forces, a state of civil war exists, and the principle is then applied as in international war, which will be discussed later.

The external security of the British Empire is, broadly speaking, dependent on the conditions that govern the Empire and the relations of the Empire as a whole with foreign powers. For convenience we may refer to these as our imperial and international obligations respectively.

## IMPERIAL OBLIGATIONS.

The geographical areas—Dominions, Colonies, and Mandated Territories—that together comprise the Empire, separated as they are by great oceans, render the problem of meeting the requirements of Security one of peculiar difficulty. If, in addition, we recall the fact that both Canada and India have great land frontiers, and that our West African Colonies are hemmed in and nearly surrounded by foreign territory, we realize that the military commitments arising out of our Empire status are very great.

It is an accepted principle that each self-governing Dominion should be responsible for its own internal security and for holding out against external aggression until such time as relief can arrive. In the case of the Colonies, Protectorates and Mandated Territories, the responsibility for internal and external security rests, in a varying degree, with the Home Government, who must ensure that sufficient forces are maintained to meet the requirements of the situation.

In Egypt we have a special problem in Security owing to the anomaly that has arisen between the political status of that country and the essential character of the Suez Canal as a vital link in our inter-imperial communications. The development of the Mosul oil-field, and the laying of a pipe-line from that field to Haifa in the Mediterranean, appears likely to create a somewhat similar problem in Iraq.

We may, however, summarize these several commitments under three headings as follows:—

- (a) To safeguard imperial communications;
- (b) To secure all parts of the Empire from invasion;
- (c) To preserve order within the Empire; and these, together, constitute the obligation usually known as "Empire Defence."

#### INTERNATIONAL OBLIGATIONS.

In its international aspect, Security is dependent on mutual good will, fortified by treaties, declarations and covenants, and is strengthened or jeopardized, as the case may be, by the day-to-day policy of the several nations.

Under Article XVI of the Covenant of the League of Nations, the Empire is bound to co-operate with other members of the League in the exercise of economic pressure, by blockade or other means, against a covenant-breaking State and, by implication at least, to use more direct military action should the occasion to do so arise. The Locarno Treaty binds Great Britain to assist France, Germany, or Belgium in the case of aggression by any of those Powers against the other. Under other agreements we are responsible, in conjunction with other members of the League, for ensuring the observance of various minority treaties, while, in addition, we have commitments arising out of our own policy of exclusion in respect of Egypt, the Persian Gulf and Afghanistan.

In turn these commitments may be summarized as binding us:-

- (i) To fulfil the obligations imposed on us by the various treaties to which we have put our hand;
- (ii) To enable the Government to counter foreign aggression against our interests.

These represent the extent of our international obligations, and, together with Imperial Defence, represent the military commitment of the British Government.

# STRENGTH OF ARMED FORCES.

The principle of Security demands that we should, from time to time, review the situation, and in the light of these commitments determine for ourselves the minimum adequate strength of the three Services to support our obligations. When, under one pretext or another, we surrender our sovereign right of decision on such a vital question, we deliberately flout this great principle. In other words, limitation of armaments by international agreement on the basis of relativity, independent of national obligations and geographical considerations, cannot be justified on grounds of Security. Justification may be sought for such agreement on political, financial or moral grounds, or it may be held that the goodwill engendered by them is such as to justify acceptance of the consequent loss of direct Security, but, ultimately, when a crisis arises and the alternatives of peace and war are in the balance, good will, which, after all, is the basis of international security. must, by hypothesis, have given place to mistrust. The experts will then be occupied compiling comparative tables of force, making appreciations, and deducing nice calculations of the prospects in the event of war, while statesmen will then be listening to their experts as at no other time.

If the issue be peace, Security is assured, but if war be determined upon, Security gives place to insecurity in every phase of activity. Although much can be done to reduce the degree of insecurity, there is, of course, no such thing as absolute Security in war, and those who seek it are the least likely to achieve it or anything else.

## SECURITY IN WAR.

The interpretation of the Principles of War as applied to naval warfare are not available for publication, but the Army Council have authorized the following definition of Security:—1

"Security consists in making provision against any action of the enemy which would prejudice the attainment of the object. The aim in providing for Security must be to ensure liberty of action, to be prepared to meet and defeat the enemy's counter-strokes, to conserve strength and to maintain essential interests. The chief considerations which govern action in obtaining Security are to guard against surprise, to preserve morale against subservient influences, to dispose protective detachments so as to guard what is vital, and allow forces to move and rest undisturbed. Security may also be procured by offensive action or the threat of it. The retention of the initiative is the most effective means of ensuring Security."

<sup>1 &</sup>quot;Field Service Regulations," 1929. Vol. II, p. 9.

No doubt all this is true, but it appears to attempt too much, and, in consequence, as is often the case, achieves too little; moreover, it lays too little emphasis on the offensive as a means of obtaining Security; and is not worded so as to be applicable to all three Services, as the Principles of War and their definitions should be. It would appear sufficient to say that Security consists in making provision for liberty of action, and is best procured by careful planning for and the bold execution of operations designed to obtain and maintain the initiative.

## STRATEGICAL SECURITY.

The initial strategical insecurity that is created by a declaration of war can be minimized by good intelligence, efficient Security Services, the way in which international law is applied, and by readiness for war, the objects being to obtain freedom from strategical surprise and liberty of action. These in turn, if rightly used, would result in strategical Security.

#### INTELLIGENCE.

Correct intelligence in regard to the enemy's resources is clearly an important factor in Security, but we should not anticipate more than a knowledge of his limitations, general dispositions and the characteristics of his leaders. From these, however, much can be deduced, but great caution is necessary not to surrender the initiative by basing our plans on the enemy's supposed intentions. We know that the famous French plan XVII miscarried because it was based on incorrect intelligence in regard to the intentions of the German High Command, and how we, ourselves, were deceived in regard to the role of the enemy cruisers "Goeben" and "Breslau" in the Mediterranean, because our intelligence, correct so far as it went, was incomplete, and we were unaware that Germany and Turkey had signed a secret treaty a few days before the outbreak of war.

Subsequent to an outbreak of hostilities, intelligence of an operational character is likely to be restricted to what we can observe or deduce from reconnaissance, unless, of course, we are so fortunate as to be able to decipher the enemy's signals.

# SECURITY SERVICES.

Security Services include counter-espionage and the protection of cyphers, and embrace all means to enable operations to be initiated without the enemy becoming aware of the intention, object, etc. . . . It is manifest that the greater the efficiency of these Services, the less need there will be for caution in planning and deciding on operations, for then surprise, the handmaiden of Security, will be on our side.

# INTERNATIONAL LAW.

By prescribing an accepted code of conduct, international law lessens the chances of unwittingly antagonizing neutral states, and ensures that due warning will be received should a belligerent be heading dangerously in that direction.

In 1780 the British Government considered the entire stoppage of contraband trade to be so essential that they deliberately preferred the addition of Holland to our enemies to its continuance. In 1915 and 1916 we were faced with the alternative of permitting Germany to receive supplies from overseas via Holland, Denmark and Scandinavia or of an embargo being placed on the export of munitions of war to the Allies from the United States, and wisely preferred the former. On the other hand, Germany's violation of neutral rights directly contributed to the entry of the British Empire, Italy and, ultimately, the United States into the war as the allies of France and Russia.

#### READINESS FOR WAR.

These three—Intelligence, Security Services and wisdom in applying International Law—should result in freedom from strategical surprise; but, in order to take advantage of this, we must be prepared for war, by which is meant immediate readiness to counter, dislocate and lay in ruins any schemes that the enemy may have in contemplation for our discomfiture. In other words, we must be ready with a plan, and it must be of an offensive character, for, as Jomini tells us, "he who awaits the attack is everywhere anticipated."

On 8th February, 1904, some four hours after the commencement of the Russo-Japanese War, Japan had assured herself of strategical Security for many months to come by the bold execution of a wellconceived plan. No doubt the plan appeared to be full of risk, but their intelligence was good, and they had taken the measure of their opponents. In August, 1914, nothing comparable happened, because no offensive operation had been planned, and strategical Security was never attained till some four years later, when the morale of the German navy broke down. It may be doubted whether an offensive plan involving the main fleet could have been executed in the early days of the Great War, because any plan, and more particularly one of an offensive character, must be built up on the sure foundation of Security, which alone ensures liberty of action, and this, as we shall see directly, the Grand Fleet did not enjoy for many months. On the German side, the foundations were secure, and the High Sea Fleet was at liberty to operate offensively. We know, moreover, that Admiral von Tirpitz, realizing this, was urging the Kaiser to adopt the offensive at sea, but that the Kaiser would not permit the German fleet to proceed to sea except under such restrictions as to render it futile to do so.

## BASES.

This liberty of action which the High Sea Fleet possessed, but which was denied to the Grand Fleet in 1914, is dependent upon the provision of secure bases, adequate supplies, and protective measures against mines.

Bases where the main fleet, protective squadrons and convoys can assemble in reasonable security are required, and their provision is an integral part of preparation for war and the planning of operations. They must be suitably situated geographically, and this requirement must not be sacrificed to Security. A perfectly secure base wrongly situated is useless, but steps can usually be taken to render an insecure base in a good strategical position reasonably secure. Prior to 1914, Scapa Flow had been selected as the concentration and operational base for the main fleet: it was admirably situated but no steps had been taken to render it secure. This neglect has sometimes been explained away as an ingenious stratagem to deceive the Germans, and because they, lacking the needful enterprise, never attacked Scapa Flow, we are asked to believe that no harm resulted. That this is not the case is well brought out by Mr. Winston Churchill in the "World Crisis," Vol. I, where we read the following:—

"The Grand Fleet was uneasy. She could not find a resting place except at sea. Conceive it, the ne plus ultra, the one ultimate sanction of our existence, the supreme engine which no one had dared to brave, whose authority encircled the globe—no longer sure of itself. The idea had got round—the German submarines were coming after them into the harbours."

And a few lines later he continues :-

"Now, all of a sudden, the Grand Fleet began to see submarines in Scapa Flow. Two or three times the alarm was raised. The climax came on October 17th. Guns were fired, destroyers thrashed the waters, and the whole gigantic armada put to sea in haste and dudgeon."

Of course, there never was a German submarine in Scapa, but a few days later the fleet withdrew out of the North Sea, surrendering the advantage of a perfectly situated base, partly uncovering the whole worldwide system of trade protection and offering the enemy marvellous opportunities for offensive operations in comparative security. In the course of this retreat we lost the battleship "Audacious" in a minefield, and must be considered fortunate not to have suffered greater ills. That

was the direct price we paid for our neglect to give Security its rightful place in preparation for war.

It is right, however, to add that Security in relation to bases does not mean "impregnability," nor yet the power to sustain attack on an unreasonably large scale, or for an indefinite period of time. The assessed scale of attack must be reasonable, and the defence proportionate thereto: moreover, every base cannot be defended, and it requires much consideration before a selection can be made, and the needs of each decided upon.

#### SUPPLY.

Mobility, without which all else is useless, is mainly dependent upon supplies of all kinds being available in adequate quantity where and when required. For the moment, however, we will only concern ourselves with fuel oil, the agent that directly governs the power of movement of all armed forces, not excluding that of cavalry and infantry.

For naval purposes fuel oil is at present in general use. We may however, be witnessing a period of transition, and no one can yet say whether, in the near future, we shall be using coal oil or coal dust, but it is at least certain that our Security demands that it should be one or the other; yet our national contribution to the production of coal oil appears to be confined to a rebate of the 3d. a gallon import duty on petrol produced in Great Britain and Northern Ireland.

#### MINE SWEEPING.

The presence of unlocated minefields may deplete the available force below that required for Security. If the means of clearing located fields are inadequate, especially in the vicinity of channels and the approaches to harbours, the freedom of movement both of the naval forces and of merchant shipping may be seriously impaired.

Since naval control over an area can never be so complete as to prevent the laying of mines, at least sporadically, the provision of minesweepers and the necessary equipment for sweeping and clearing minefields both at home and abroad is called for.

## EXECUTION OF THE PLAN.

Provided the plan has been well conceived, is offensive in character, and that due preparation has been made for its execution, strategical Security is best obtained by bold, resolute action in accordance with it. Unfortunately, owing to our absolute dependence on overseas trade, we are under the necessity of initiating a series of world-wide protective operations simultaneously with the main offensive. It must not, however, be supposed that this necessarily means operations of a defensive

character, for it will often be the case that local as well as general Security can best be assured by the execution of an offensive plan.

We have seen that in 1914 no such plan existed for use in the main theatre, and that, in default, strategical Security was not obtained. In the Far East, at the same period of our history, the initial strategical insecurity was both increased and unduly prolonged by reluctance to put the pre-conceived plan into immediate force. The plan was in effect a close blockade of Tsingtau, and all needful preparation for its execution had been made, but, on the very eve of war, the Commander-in-Chief, China, was ordered to proceed 1,400 miles to the southward to Hong Kong with all available ships.

Subsequently the plan was executed with a measure of success, but before the ships could take up their dispositions the German cruiser "Emden" had got clear to the southward, and some ten steamers laden with munitions and supplies for Admiral von Spee, had gained the open sea to the eastward. This delay has never yet been satisfactorily accounted for, but, as is well known, it had tragic consequences.

Nevertheless, whether the main fleet, detached squadrons, or a force responsible for the security of a particular area are involved, the execution of the pre-conceived plan involves and pre-supposes acceptance of those risks and dangers that cannot be provided against beforehand: they are of the very essence of war and must be accepted as such. They may, and indeed must, be guarded against by every means available if, and only if, this does not in any degree prejudice the attainment of the Object, but, generally speaking, as the time for action arrives, the Principle of Security would steadily recede from our minds in favour of those others, such as the Principle of the Offensive, which must more and more dominate our thoughts and actions as the enemy draws nigh.

"In meditation all dangers should be foreseen, in execution none, unless they be very formidable." 1

When contact is gained with the enemy and battle is joined, Security is only to be found in victory, and victory is only to be attained by a vigorous, bold and sustained onslaught. This is, unfortunately, not susceptible of proof, but is a matter of faith: not blind faith, however, for history contains innumerable instances to show us that where the offensive is half-hearted or the mind of the commander is weighed down by considerations of safety and defence, no great victory results. On the other hand, we have such great examples as Broke's capture of the "Chesapeake," Gardner's taking of the "Foudroyant," Forrest's fine victory off Cap François, Hawke's intrepid chase of the French fleet

<sup>&</sup>lt;sup>1</sup> Bacon.

into Quiberon Bay, Nelson's well-considered attack at the Nile, his daring operations at Copenhagen, and his immortal onslaught at Trafalgar, all combining to prove how much fortune loves a daring suitor.

It is commonly said that fortune is fickle, and that, on this account, to trust to her in a matter of such supreme importance is to hazard all on a crude, bald-headed, offensive; but such is not the case where, by deep study and great forethought, the commander has prepared himself and his command to take advantage of her smiles and to discount her frowns, for by so doing his attack is converted into an aimed weapon of the greatest precision.

Should it, therefore, be the fortune of any one of us to command in war, let us be well prepared and be sure that our actions are built up on the secure foundations of pre-war measures of preparation well knit together with the cement of Security. Then, with a clear conscience and the example of Nelson to fortify us, we may commend ourselves and our cause to God, and forget all about that great burden of responsibility that will undoubtedly be ours, but which, if allowed to weigh on our minds, will undermine the resolution of even the most determined of men.

Finally, we must never forget that, when all is said and done, Security is but a shield and not a lethal weapon, and, while shields no doubt serve many useful purposes, in war it is by the sword that decisions are reached, victories gained, and Security finally attained.

# THE ARMY AS A CAREER

By LIEUTENANT-COLONEL G. McM. ROBERTSON, D.S.O., p.s.c.
On Wednesday, 12th November, 1930, at 3 p.m.

MAJOR-GENERAL C. BONHAM-CARTER, C.B., C.M.G., D.S.O., in the Chair.

THE CHAIRMAN introduced the Lecturer.

#### LECTURE.

WOULD like to preface my remarks by saying that such statements as I shall make, when these are not actual facts, are the expression of my own views, and are not in any way official opinion.

The first difficulty I have encountered in preparing the following discussion was that of "maintaining the objective," as suggested in the title "The Army as a Career." My next difficulty was that, on the assumption that I should be addressing rather the general public than Service men, it would suffice to bring to notice living examples of famous men, whose names are household words—men who have risen from the lowest to the highest ranks within the Army itself. If I found that this was not sufficient, I could then fall back on other famous men who, on leaving the Army, now occupy high appointments in the State, in the Colonies, and even in business.

I felt, however, that the "attainment of my object" was not quite such a simple matter, and so I will endeavour to reach it by a series of bounds, taking each feature by itself. Whether I ultimately reach that object is another matter. I would feel happier if I were allowed to change the title to "The Army as it is," and in order to give as comprehensive a picture as possible of "The Army as it is," I propose to deal first with those aspects of the subject which affect "The Men," and then, later, with those which concern "The Officers."

#### THE MEN.

There is no doubt that the rank and file has never served under such good conditions as they do at the present time. Year by year, as money becomes available, barracks are brought more up-to-date, whilst recreation rooms now almost resemble clubs in their comfort. The food, its preparation and its service, has improved beyond recognition in comparison with pre-war days. In fact, it is doubtful if there has been such

an improvement in the standard of living in any walk of life as has taken place in the rank and file of the Army. To those of us who have had the opportunity of observing the conditions in foreign armies, the standard we maintain is amazing. At the same time, the Army has definitely set itself the task of building up the mental and physical standard of the soldiers since it is recognized that such treatment is necessary to produce character combined with efficiency. Educationally, the soldier is compelled to attend classes until he attains a certain standard, thereafter he is given every inducement and encouragement to continue his education if he so wishes.

In no service is such great prominence given to physical fitness. Nowhere in civil life will a man obtain, and what is more important, take part in so much sport and do so at an almost infinitesimal cost to himself. Finally, when one considers that all the necessities to the man's well-being are provided free—or that he is given a money equivalent—the pay—2/- per day—is a fair wage, provided he is a single man.<sup>1</sup>

Shortage of Men.—Nevertheless, one cannot get away from the fact that there is a very great shortage of men in the Army. On 1st October, 1930, the Army was 9,490 men below Establishment, and by 1st April, 1931, this deficit will have risen to 11,500 men.

Causes.—The main cause of this is the large number of men passing to the reserve during the past two years, the result of the abnormally large intake of recruits in 1922-23. At the same time, recruiting has fallen off. Last year 26,500 recruits were obtained as against an average of 29,500 during the previous five years.

Practically the whole of the deficit falls on the infantry and on the infantry at home. Other arms, with certain minor exceptions, obtain their full requirements. Thus, as a general rule, in any given year the requirements of the other arms, subtracted from the total intake of recruits, gives the number available for the infantry. The larger the intake and the smaller the requirements of other arms, the greater the gain for the infantry. This must be qualified by the fact that a certain number of would-be recruits will not enlist at all if they cannot get the arm of their choice, and are lost altogether. The obvious conclusion is that infantry holds out the fewest attractions, and that potential recruits, looking to the future, select an arm where they can learn a trade which will be of use to them on return to civil life. Consequently, how to make the infantry more attractive is an exceedingly difficult problem. Vocational training, as far as it goes, is a help, but it does not cover the whole ground.

<sup>&</sup>lt;sup>1</sup> For further details see the pamphlet, "The Army of To-day."

An improvement in the recruiting position is the obvious remedy to this shortage, but it is difficult to forecast an improvement as, apart from certain factors which are adverse to recruiting at the present time, we are reaching a period when, owing to the low birth rate during the war, the number of youths reaching the recruitable age is shrinking. The standard set for a recruit is high. Barely 40 per cent. of those presenting themselves are accepted, as against some 60 per cent. before the war. This is partly due to a more exacting standard, but it is probable that, before the war, a number of border-line cases were weeded out in the Special Reserve, from which some 10,000 recruits were obtained annually for the Regular Army.

It is difficult to compare our percentage of rejections with that of foreign armies. Being based on the whole manhood of the nation, their rejections should be smaller in comparison, and a man unfit for one arm can be posted to another, but in all probability our standard is higher and more strictly adhered to. To lower it, though increasing the strength of the Army temporarily, must lead to a higher rate of wastage later. This is uneconomical, for not only are hospital charges increased, but money is wasted on training men who are lost before they can render efficient service. In this connexion it must be remembered that we are primarily a foreign-service Army and a long-service Army.

However, the point at the moment is how to make the infantry more attractive.

It seems that the potential recruits do not consider that:-

- (a) The present financial reward for service is insufficient to compensate for apparent lack of training for civil life;
- (b) The infantry does not train for civil life in comparison with the possible training received in other arms.

I do not propose to deal with (a), since it is mainly financial, and is consequently a matter for the State to decide. With regard to (b) the Army, by the very nature of its being, has two great problems to solve:—

- (i) With the exception of those arms in which the nature of the work is similar to that in civil life, it is all but impossible to give specialized training in any particular subject to such a vast collection of individuals. While the man is serving, the Army can only aim at this ideal, by giving, or rather offering, such general educational facilities as will assist a man to take his place in civil life with the best possible educational equipment.
- (ii) It also endeavours to give the man, towards the end of his colour service, some specialized training by the establishment

of Vocational Training Centres. In so far as they are able, with the money available, these centres have proved most successful, not only in regard to the training itself, but also in finding employment. For instance, for the month of August, 1930, the Training Centres completed instruction in 23 different trades to 150 men. Of these 150, no less than 101 got employment on completion of the course, whilst some 20 of those who had previously done the course obtained employment.

Conclusion.—It would appear that for the man in the ranks the prospects are good. The N.C.O. cadre must be kept filled; thus, owing to the shortage, the proportion of those who join now to become N.C.Os is very great. I can assure you they join a very efficient and happy body of men.

## THE OFFICERS.

And now to deal with the subject from an officer's point of view.

Pay.—I will begin with pay, but I do not propose to discuss this as, firstly, it is a matter for the State to decide, and secondly, a mere series of figures can convey but little meaning. However, a short table of rates of pay as far as Regimental Officers in the various arms are concerned is included as Appendix I.

Promotion.—Before proceeding with the subject of promotion, which is causing some concern to most officers, especially among those who are junior captains and senior subalterns, it may be as well to make a few general remarks in order to try and visualize the reasons for the present block.

At the outset I would say that no one realizes the situation better than our higher military authorities, and no one is more assiduous in their efforts to find a way to increase the flow. Meanwhile, let us consider for a moment the factors which have brought about the situation.

The first is the principle of promotion in the British Army, namely promotion or appointment to fill a vacancy in the Establishment, which principle, with exceptions in certain arms and corps, is applied throughout the Service.

The next factor is the War and its after-effects, such as:-

- (a) Rapid promotion during the War;
- (b) Rapid and large recruitment of officers, with big batches of them coming in at approximately the same age;
- (c) Reductions from War Establishment to Peace Establishment, both within units and throughout the Army.

This second factor has brought about a situation in which we see, in the same unit, a junior major of 38 or 39 years of age (18 to 19 years' service) and a senior subaltern of 32 to 33 years of age (13 to 14 years' service); between these two lie some 20 to 26 Captains between 32 to 39 years of age—that is, the batch who came in during the four years of war.

The problem is how to create vacancies. All officers above the rank of subaltern have their ambitions: none of them has any thought of retirement, as it will be many a year before they have earned their full pension, and most of them have little or no private means, and so cannot afford to lose these pensions by premature retirement. The result is a stalemate due to conditions which only time can improve.

It has been said that a General List would be the solution. This is more than doubtful: it might solve the problem of relative seniority, but it would not prevent the block.

It would appear that the only solutions are :-

- (a) Offering inducements for early retirement;
- (b) Pay increase in accordance with service;
- (c) Time promotion.

The real stumbling-block to any of these suggestions is financial—extra expenditure. The Army would, therefore, have to put forward a very strong case before such suggestions would meet with favourable reception in these hard times. Nevertheless, I would emphasize to those who are thinking of "The Army as a Career," and wish to join it now, that this cloud is not so black as it seems, and has quite a good silver lining. Owing to the shortage of entry, with which I will deal later, most infantry units are five or six below establishment, whilst to fill these vacancies units only get from one to two cadets each half-year; consequently, the cadet goes up five or six places on joining, while those above him are evenly placed in accordance with age. The prospects, therefore, are distinctly good. Further, in so far as the Army authorities themselves can solve the problem, they have done a great deal to help matters by evolving a very systematic form of promotion and selection.

System of Promotion.—I will give an outline of our system of promotion.

From 2nd Lieutenant to Lieutenant promotion takes place at the end of three years, in every case ante-date to count.

From Lieutenant to Captain: by seniority, although in the following arms time promotion is in vogue: R.E., R.C.S., and R.A.S.C. after eleven years, R.A. after thirteen years. A small proportion is selected

for acceleration in special cases, and although actual promotion may not take place, every recommendation is thoroughly considered.

From Captain to Major: the greater proportion is promoted by seniority, a good proportion by acceleration or by the giving of brevet promotion or ante-date.

From Major to Lieutenant-Colonel: all selected although seniority carries great weight. It is in this rank, however, that selection really starts in earnest, and although majors may not receive substantive promotion, a great proportion do receive brevet promotion and antedates, whilst quite a few go direct to full colonel's rank.

From Lieutenant-Colonel to Colonel and beyond: promotion and appointments are entirely by selection from the more senior.

I will next describe the procedure adopted for Staff College nominations, most other selections being based on this system.

For the Staff College the first qualification is the Commanding Officer's recommendation to be permitted to sit for the examination, which recommendation must be endorsed by commanders of higher formations, while the second is that of qualifying in the examination.

Apart from those who have passed in by competition, and assuming that the officer has only qualified, the system for selection for nomination to fill the remaining vacancies is the following: a list-list "A"-is prepared which contains the names of all officers who have qualified in the current examination or in a previous one, provided they are within the age limit. Against each name is given the officer's corps, date of birth and his record. The record is summarized by a system of marking, and this system covers the whole field of military activity. In the examination itself, he gets marks in accordance with his results with additional marks for each time he has qualified. For his record marks are awarded for every conceivable military event in peace and war, e.g., for war service such items as honours and awards, mentions in despatches, staff and other appointments, etc.; for peace service such items as staff appointments, instructional appointments, adjutancies, recommendations for acceleration in rank or by brevet promotion, are taken into account. Each and every event carries marks based on the varying importance of the event.

This list is then pruned by the simple process of cutting out all those who do not attain a certain proportion of marks. Elimination proceeds till some forty-five candidates are left; that is three to each vacancy.

A new list—list "B"—is now prepared. It consists of a separate sheet for each candidate; the sheet contains the same information as in list "A," except that all names of candidates are eliminated. To each

sheet is attached a copy of every confidential report the officer has ever had, the names of Commanding Officers being eliminated. Sufficient copies of these sheets are made to circulate to each Military Member of the Army Council, and the Members are asked to record, independently, their selection by order of merit. The results of their votes are collated, and the candidates over whom the voting was unanimous are selected. The Army Council then meet to decide which of the remaining candidates are to be chosen to fill the one or two existing vacancies.

The procedure adopted for the selection of half-yearly brevet promotions and all accelerated promotions is similar in principle to that which I have just explained.

# METHOD OF ENTRY INTO THE ARMY.

Apart from enumerating the methods of entry available, I will not deal with them in detail, as all the conditions are laid down concisely and clearly in the various pamphlets, all of which can be easily obtained.<sup>1</sup>

The methods are:-

- (a) Royal Military Academy (Woolwich);Royal Military College (Sandhurst);
- (b) Army Cadets;
- (c) University candidates;
- (d) Supplementary Reserve candidates;
- (e) Territorial Army candidates.

1 The pamphlets referred to are:-

- General Guide to a Commission in His Majesty's Land Forces (Regular Army, Supplementary Reserve and Territorial Forces), 1930.
- (ii) For (a).—Regulations respecting admission to the Royal Military Academy, Woolwich, and the Royal Military College, Sandhurst, 1929.

  Sec. (b) Regulations under which Non-commissioned Officers of the
- (iii) For (b).—Regulations under which Non-commissioned Officers of the Regular Army and soldiers trained as Apprentice Tradesmen may be granted commissions as Second Lieutenants, 1930.
- (iv) For (c).—Regulations under which commissions in the Regular Army may be obtained by University Candidates, 1930.
- (v) For (d).—Regulations respecting the Grant of Permanent Commissions in Cavalry, Infantry, Royal Tank Corps and Royal Army Service Corps of the British Service, and also in the Indian Army to Officers of the Supplementary Reserve and the Channel Islands Militia, 1928; also Grant of Permanent Commissions in the Household Cavalry and Foot Guards to Officers of the Supplementary List of the Regular Army. Reserve of Officers of the Household Cavalry and Brigade of Guards, 1928.
- (vi) For (e).—Regulations respecting the Grant of Permanent Commissions in the Cavalry, Royal Artillery, Infantry, Royal Tank Corps of the British Service, and also in the Indian Army, to Officers of the Territorial Army, 1929.

It will be observed that the Army has thrown its net far and wide, although the main channel remains—Woolwich and Sandhurst.

It may be of interest to give briefly the policy of education at these two institutions, as it has changed considerably in recent years. The object of the course is devised to give the cadets as broad a view as possible of their profession as a whole in the time available, as well as an idea of their responsibilities as servants of the State; also to inculcate and develop the essential military characteristics of leadership, discipline, physical fitness and a high sense of duty. To attain this object, the teaching now includes such subjects as history of Europe and of the British Empire, national organization and administration, bookkeeping and accountancy, languages, as well as military subjects common to all arms. Specialist subjects such as gunnery, advanced military engineering and weapon training, are not touched until cadets receive their commissions.

Entry into the Army.—For some time past, there have been very disquieting features with regard to the candidates coming forward. Not only are we not getting the quantity—in other words there is no competition—but also the standard of the examination is not as high as we would wish, in fact the authorities would like to raise it at the first favourable opportunity. However, at the moment they insist that the standard shall be maintained, and accept only those who attain it.

The lack of entry has formed the subject of continuous investigation, but it is difficult to arrive at the real causes of it. In my opinion the most important cause is economic. Families from which we expect to recruit our officers, in common with all classes, have been hard hit by the War, and still more so since. In their efforts to maintain their position we notice such tendencies as limitation of families, or sons turning their attention to other professions where they feel they may secure better financial prospects. The Army loses both ways; fewer boys in the field from which to select future officers, and more of those boys seeking elsewhere for a profession. (See Appendix II.)

Another factor is the enormous growth of commercial enterprises of world-wide activity, which now compete with the Services in trying to secure boys of the type we want, who, by their education and upbringing, have developed the powers of initiative and leadership. These enterprises, in many cases, offer more attractive terms of service and some of them even pensions. Another reason, also economic, is the fear of those about to join of small pay or premature retirement at middle age.

I can only say that in all discussions of "The Army as a Career" with schoolmasters and others who have to handle boys and, what is

more important, have to advise them or their parents in a choice of their future career, it is this very factor—a small income at middle age or premature retirement—which weighs most heavily against the Army. It is only natural for men when they reach middle age to expect to be married; it is also natural for them to hope and expect to have children and their attendant liabilities.

In addition there are certain facts that are peculiar to an officer. Firstly, wherever he goes he is regarded as being of a certain social standing. Whatever his rank may be he is expected to live and have his being, within reason, within a certain definite circle. His origin is immaterial; once he becomes an officer he is accepted into this circle, and his brother officers, his men and his friends expect him to assume the contingent social responsibilities. When he is married and has children, his liabilities within this circle obviously increase; he cannot, except in a limited degree, like a civilian retire into his shell and live his own life and then emerge when the liabilities have been dealt with.

The second fact is that he is liable to serve in any part of the world. In a few stations abroad he cannot have his family with him, and this means the maintenance of a double establishment. In nearly every part of the world in which he serves the educational facilities are so limited that when his children reach the educational age they must be left in England. There is no question of snobbery about this; the officer is an Englishman, and his aim in life is to give his children the best English education he can provide. Though allowances are given to the married officer, no one can even pretend that these allowances cover all the liabilities.

Thirdly, just when his responsibilities in regard to his family are reaching their most acute stage, the average officer comes professionally within the period when his future retention in the Army is coming up for decision, and he is faced with the fear of premature retirement. There is very little the Army itself can do to solve this problem, which is mainly financial—may I remind you that the Army is a Department of State—it is for the State to find the solution.

But it is this form of fear—premature retirement for the average officer—that leads one to the next general criticism of the Army, namely that it does not qualify its officers to take their place in civil life. In a sense this criticism is perfectly true, but it must be remembered that in these days the Army is a very scientific profession. It takes an officer all his time and energy to keep abreast of his own profession. Nevertheless, the average officer does have to leave the Service before the comparatively early age of fifty; by then in all probability

he is married, and his domestic responsibilities have reached their most acute stage. His pension alone cannot meet these responsibilities and he must find some means of earning money.

Now the problem is what can he do? It is not so much that the officer is not trained for civil life. As a matter of fact, he is a very highly qualified man. I cannot believe that a man is incapable of doing any other form of work when he has had the responsibility of handling and leading men in all parts of the world, and of organizing the various requirements necessary to their efficiency and welfare. No! this man possesses qualifications well above the ordinary; the point is how to apply the qualifications. So we have to face the real problem, which is similar to that of the men, only in a more accentuated form; namely getting the officers in touch with the right employer at the right time and place.

Taking the point of view of the officer, who we see has to retire after long years in the service, he is out of touch with the civil market, and he realizes he must get work and get it quickly. There is no one to help, and he does not know which way to turn, and finally he has no official credentials to back him. If he is lucky enough to be offered anything he takes it at once. The work may not be suited to his qualities; it may be salesmanship, while his peculiar abilities lie in the direction of organization. He fails, and begins his wandering again, and the employer enlarges on the inefficiency of Army officers in general.

Taking the point of view of the employer, we see that he does not know what kind of man he is getting and has to employ him entirely on his own statements. In addition, most employers when they employ a man of the age and standing of a retired officer, will accept only those with experience of the position offered and desire immediate results.

The trouble, therefore, is to bring the two aspects into closer relationship to each other. It has been suggested that the problem would be solved if some official organization were to be set up. The idea is that this organization would tabulate from official records the characteristics and qualifications of officers who register. At the same time, the employer has the certain knowledge that he is dealing with an organization which can tell him quite definitely the records of men of the type he wants.

I personally have such faith in the personnel of the Army that I feel convinced that the establishment of such an organization would prove a success; so much so that the obvious criticism, from the point of view of the State, is that this organization will entice officers to retire, and thus affect the non-effective vote. This aspect can be dealt with by the Regulations as they stand at present.

Yet another criticism is that the Army offers no opportunity to capable men. With this criticism I emphatically disagree. What do we mean by opportunity? If by opportunity we mean "get rich quick," "draw large salaries" or "retire at an early age" then quite definitely there is no such thing as opportunity in the Army. But if by opportunity we mean to be given a chance to show our qualities of whatever kind they may be, then quite definitely there is ample opportunity for those who try and work for it.

I should like to be shown any organization that can do any of the following things, and do them successfully and efficiently:—

- (i) That can improvize at a moment's notice, in the middle of profound peace, a force of about one division and despatch it from England to China. That can bring it about that this same force on arrival, by its mere reputation and by its conduct, will maintain the peace without even a tear being shed.
  - (ii) That is prepared to produce, to take the risk of financial loss, and to deal with the hundred and one details of a spectacle such as the Aldershot Tattoo or the Royal Tournament, managed and produced by untrained personnel merely as a side-line to business, with no cost to the State and no financial backing by anyone.
  - (iii) That is responsible for the maintenance of an Army which is admitted to be a model of its kind; which is prepared for service all over the world (a feature which is peculiar to our Army), and yet can do all this on a steadily falling Army estimate, of which about one-fifth is absorbed by the non-effective vote. It is obvious that this organization, the Army, must offer opportunities for the employment of every talent, and needs the very best brains to solve its problems.

And now the final reason, often stated to be affecting the recruiting of both officers and men, is propaganda. This consists of two kinds: one the general talk of cuts and disbandment in the Army, and the other the continual preaching of a so-called gospel of peace, which consists mainly in discrediting the men who maintain it.

With regard to the former, it is a matter of State policy. All I can say is that no one knows, but as a matter of opinion it seems to me difficult for this Empire to reduce its Army much more: its responsibilities have increased out of all knowledge since the War, and yet its Army has been reduced in comparison with 1914 by some 9 cavalry regiments and 22 infantry battalions.

Again, I may be repeating platitudes but sometimes repetition is necessary in case we forget. This nation lives by trade—and trade on a large scale. Trade can only flourish provided Law, Order and Security are maintained. Does the public really believe that these essential elements for the progress and expansion of trade can exist for one moment if the armed forces are withdrawn from their posts on the trade routes of the world? One has only to read the headlines of daily papers, where nearly every day we read of civil war here, revolution there, and most of these disturbances very near our borders. Anyway, each one affects our trade in some degree.

In regard to the propaganda of peace. The essence of peace is security, and real security can only be obtained by maintaining the highest standard of character of those who serve the nation. Do these propagandists realize what a disservice they are doing, not only to the cause of peace but to the nation and the world at large, when by their propaganda they tend to keep the best men out of the service of the State and of the Army in particular, and so lower the standard of this character? These people endanger peace and goodwill.

#### CONCLUSION.

It may seem that the conclusions are obvious. The Army holds out little attraction to those who desire financial benefit. But I would like to repeat that at the outset I asked permission to change my title to "The Army as it is." I have tried to give the picture honestly, because I am a firm believer in the old proverb that "honesty is the best policy," and because it was not my intention to entire anyone into the Army by painting a beautiful vision.

Let me summarize what I have said :-

- (a) With regard to the man. In my opinion the Service is good, and at the present moment it offers great opportunities in the way of promotion. The man will lead a clean and by no means uncomfortable life, with plenty of interesting work and healthy play. I have yet to meet an ex-soldier who does not look back on his past service with the Colours with a very real feeling of affection tinged with regret at having had to leave.
- (b) With regard to the officers. I have stated all the pros and cons. It is for the man who contemplates joining to weigh them up and make his decision.

I would point out, however, that :-

- (i) There are few professions which offer such cheap entry and such good pay at the commencement of a young man's career. You have only to compare the expenditure of money and time at the Military Colleges with similar expenditure in preparation for the legal or medical professions, and to continue the comparison between the salary paid or fees earned in the first few years of the latter professions with those of the Army to realize the benefits that parents receive. Further, it is necessary to visualize financial uncertainty when comparing the Army with these other professions.
  - (ii) I consider that the system of selection ensures, as far as any human system can ensure, that no man of ability will fail to succeed. I would emphasize that there is no such thing as luck or influence in these selective processes; it rests entirely with the officer, his own personal qualifications, and his record as a soldier.
  - (iii) As to the pay. Whether it is good or bad is a matter of opinion. I do not express one. I am a serving officer, and so whatever I say will be considered as biased. However, it has some points in its favour. I notice I draw my pay regularly every month. I admit it appears to be subject to certain variations from time to time, but I am assured these fluctuations are quite in order. I believe the fluctuations are due to some rise or fall in the index figure of cost of living. On the other hand, this income is not subject to such violent changes as the income of some of my civilian friends. This aspect of the case is very noticeable at the present time. And there is a pension.
  - (iv) Finally, putting aside the material aspect, I can guarantee that the young man who joins the Army is assured of a fine life of good fellowship and sportsmanship and, in these modern days, full of intellectual interest. He joins a Service which, in my opinion, has never been so keen and so efficient as it is at the present day, and a Service in which he will associate with men whose integrity and loyalty to their country and to each other are features of which the Army is justly proud.

## APPENDIX I.

TABLE TO SHOW RATES OF PAY WITH ALLOWANCES OF REGIMENTAL OFFICERS.

Note.—These are current rates, i.e. 7 per cent, below Standard Rates.

Note.—I here are our	rent 1	4463, 1.6.	7 per	cens, oetc	nu s	Approx total per with allo	imate annum
						Unmarried	Married
REGIMENTAL OFFIC	ERS.					£	£
LieutColonel with com	mand	l pay				1,142	1,189
Major, after five years'	servic	e as such				750	826
Major				• •		659	735
Captain, after fifteen ye	ars' c	ommissio	ned s	ervice		528	637
Captain					٠.	443	552
Lieutenant, with seven	years'	commiss	sioned	service		357	429
Lieutenant		/ · ·		••!		309	-
2nd Lieutenant	• •	• •		-4.0		272	_
Additional Pay-							
Adjutant, Regular			• •			91	91
Acting Adjutant, Depot Adjutant, T.A.	}		••	••	••	45	45

Note.—Allowances are for rations, lodging, fuel and light, but most officers are provided with these in kind. Most officers have the use of a soldier servant, and mounted officers are supplied with forage and stabling for the number of horses they require for their duties.

Corps, etc., Pay.—Officers of the Royal Engineers, Royal Corps of Signals, and Royal Army Service Corps, who hold the necessary qualifications as laid down in the Pay Warrant, receive in addition, corps, etc. pay at the following rate per annum:—

						£
Lieutena	nt-Co	lonel			 	 119
Major				• •	 	 85
Captain					 	 52
Lientena	nt an	d and I	Lieuten	ant	 	 22

Royal Army Service Corps officers, who have only a military, but not a civilian professional qualification, receive corps pay at a lower rate per annum as follows:—

						£
Lieutena	nt-Co	ionei			 	 79
Major					 	 58
Captain		* *			 	 33
Lieutena	nts ar	nd and	Lieute	nants	 	 21

APPENDIX II.

Source of Entry

Table to show Numbers of Applicants for Officers' Commissions
Numbers accepted

CANDIDATES PER HALF-YEAR

				Applicants	1118		Selected		
Source of Entry	relati	Average vacancies offered		Dec., 1929	Average over 3 yrs. Dec., 1929 July, 1930	Average Dec., 1929 July, 1930	Dec., 1929	July, 1930	Remarks
R.M.A.: (i) Open Comp. (ii) N.C.O. Cadets	mm istis	80	86	87	16 I	\$1	85	58 1.	*See Note (a)
R.M.C.: (i) Open Comp. (ii) N.C.O. Cadets	-A = (0' A	200	217	204 18	192	147 15	161 15	146 15	dw Inde or Ioula on ded
Universities Supp. Res	E vin t	33	23 20 12	39	34 32	23 19 10	15 26 8	32 24	te and blicker i marker

2 Note (a).—N.C.O. Cadets for Woolwich must qualify in open competition exam. in Mathematics and Physics. Till this done the N.C.O. is not permitted to apply.

SUMMARY: Total vacancies offered per annum

Total average applicants (approx.)

Total average candidates selected

Total average shortage

257

The actual shortage on 1st April, 1930, was 231.

It must be remembered that vacancies offered are to fill estimated future outrun of officers, Nor actual vacancies on date of offer.

#### DISCUSSION.

ADMIRAL SIR HENRY H. BRUCE asked whether any advantage accrues to the entrant to Sandhurst from a public school who holds the O.T.C. certificate, and what percentage of the late entries held these certificates?

THE CHAIRMAN replied that the candidate is credited with 25 per cent. of the marks which he obtained in his examination for certificate "A"; but, in practice, this represents on the average less than 100 marks. I would add that a candidate, who has not had an opportunity of being a member of an O.T.C., is not permitted to fail for lack of these particular marks.

The average number of Sandhurst entries who hold O.T.C. certificates is about 400 out of 450 per annum.

CAPTAIN D. A. L. WADE said: As bearing on the shortage of officers, it is worth while noting that the father who sends his son to a cadet college has part of his education paid for by the State; on the other hand, the father who sends his son to a University, the son afterwards obtaining a commission, does not get any assistance from the State, while he has to pay the whole expense of the University fees. Would it not be possible to offer some inducement to University candidates, such as scholarships? I believe scholarships are now offered for cadets at Sandhurst and Woolwich, and if some inducement could be made one might get more entrants in that way. I know the financial point is a very serious one, but there must be a certain saving of money, since the figures show that we are not able to fill all the vacancies now offered at the cadet colleges.

MAJOR C. T. BECKETT asked whether a system of short service had been considered, and what would be the effect of this on the shortage of officers at the bottom of the list and on the increasing block at the head of the subalterns' list?

MAJOR J. O. HENRIQUES said: Speaking as a parent of University candidates, one cannot help being struck by the great shortage of applicants for Sandhurst and Woolwich. Economic conditions were put forward as the explanation. What happens is that when the boy is at a public school the parent hesitates to offer him any inducement to enter the Army, unless he shows great keenness to do so. The parent's fear is that he may not be able to make adequate provision for him during his Army career or assist him in the event of premature retirement. On the other hand, the parent may be prepared to send his boys to the University, and then if they desire to enter the Army as University candidates, to allow them to do so. As it is, the parent who sends his son to the University is put to heavy expense, while the saving to the State is considerable, for the University candidate costs the State nothing until he actually receives his commission. A University candidate has to do a six weeks' attachment, which means a heavy outlay for uniform and kit, although this is ultimately refunded. During the attachment no pay or allowances of any sort are given by the State, whereas the Territorial officer, I believe, receives both during his training. Roughly it comes to this, that the parent has to lay out about £60 or £70 straightaway in order to enable his son to attend his necessary attachment. It is true that the son who has gone through the University has the advantage of having had a wider education than he would have received at Sandhurst or Woolwich; but the Army also gets the benefit of this education. It seems not unreasonable, therefore, to think that the State might make some financial concessions to the parent.

## THE LECTURER:

In reply to the question as to short service commissions and the effect of such an innovation on the shortage, this matter has had some small degree of investigation but we are up against the same problem here as in the case of the men. We must have seven years' service with the Colours in the case of the men because of the economic factor of taking them abroad and giving them enough service abroad. The point is, how far will the short service commission, say 7, 12, or 15 years, avail for the purpose? It is not in the same category as short service with the Air Force. Take an infantryman on short service commission; there is the problem of training him to be an officer, and of the length of time he should spend on foreign service, and finally there is the question as to what he will do in civil life when he returns to it at 28 or 29 years of age. It is rather difficult to come to a conclusion on the matter, and I am afraid no definite decision is yet in view.

## THE CHAIRMAN:

I will try first of all to deal with the other questions which have been asked. Both Captain Wade and Major Henriques have mentioned University candidates. Captain Wade suggested that it might be possible to assist parents who send their sons to an University, and Major Henriques pointed out some of the expenses in which parents were involved. We have been trying to do one or two things to attract University candidates. As the father of two sons who, I thought, might go into the Army, I sent them to the University, so that I know where the shoe pinches. The first thing to do to help University candidates is to say to them that they shall not lose by going to the University. Not long ago they could earn seniority only by gaining special qualifications, but the man who took a pass degree and then went into the Army was eighteen months worse off than the man who went to Sandhurst and just managed to scramble through. That struck one as being clearly an injustice, and an injustice which ought to be righted. Now every boy going to the University starts in the Army, after his University career is finished, with exactly the same seniority as the boy who goes straight from school to Sandhurst eighteen months earlier. If he is encouraged by the University authorities to stay up an extra year, for instance taking "Greats" at Oxford, or doing research work, he is then given extra seniority to ante-date his commission to the same time as his companions of the same age as himself who left school at the same time.

As for relieving the parent of some of the cost, or instituting scholarships, I am afraid that would not be received with favour by any financial authority to whom I might make the suggestion. If the parent wishes his son to go into the Army, he can send him to Sandhurst or Woolwich where he can get a very cheap education. I am in full sympathy with Major Henriques when he said that the attachment of the University candidate to a unit is a fairly costly proceeding, from which one obtains only a comparatively small return. The financial people think the return quite adequate; personally, I found it did not balance expenses. But I very much fear we cannot do anything to help.

As regards Major Beckett's question, I should like to say that we have gone very carefully into the matter of short service officers. What troubles us is the employment of these young men afterwards. If we could start a sort of employment bureau such as they now have in the Universities we might have an organization which would be able to place short service officers. The officer, by

his very occupation, does get a fine training in the organization and handling of men, and would be a valuable person as a young man in business. But I do not think we could possibly adopt such a policy unless we started some organization

to place the short service officer in employment after he left us.

Generally, as to the Army as a career for officers, what I feel is that a young man coming in at the present moment can make a fine career and have a great future. It is far better now than it was at any time in the past. If, for example, he goes into the infantry, he does not start at the bottom of the establishment, he starts a few places up. That suffices for a little time, but above him there is an enormous block of men between the ages of 30 and 40. That is not very surprising. I have only got to look back for ten years to the time when I was commanding a battalion and re-forming it after the War. At that time among my officers I had only one man who was over 28 and under 40. The whole of the middle ranks were filled by younger men, so that practically all the captains and subalterns were ranging in age from 20 to 28. That is the cause of the present block. All those men who were of that age then are now between 30 and 40. A very high proportion of them will be leaving the Army in eight to ten years. Consequently, the young man going in now has every chance of good promotion later.

Again, never has there been such care, by organization and by careful recording, to make sure that a man gifted with intelligence, determination, and industry gets opportunities for the display of these qualities. I think there are very few men, if they have really got the courage to work steadily, who cannot overcome the obstacles, and those who show a high standard of intellect have chances of

accelerated promotion which never existed before.

What I say to parents is this: if your son is keen, if you can make him just a small allowance to start with, if you are certain that he is strong enough, has character enough, to stand up to a really hard life, and you are confident that when he has to retire—supposing he is not one of the very lucky ones who get to the rank of Major-General—he will have just sufficient to add to his pension to enable him to live in the state to which he is accustomed. To these I say, let your son enter the Army. He will have an exceedingly happy and interesting life, and can make for himself a fine career

The usual votes of thanks to the Lecturer and Chairman were carried by acclamation.

# THE JUNIOR DIVISION OF THE OFFICER'S TRAINING CORPS

By A CONTINGENT COMMANDER.

## INTRODUCTORY.

HE problem confronting an O.T.C. unit varies from school to school. On the one hand, there is the large day school, situated in an industrial centre, whose governing body may contain members unsympathetic towards the O.T.C. The parents of the boys are not usually able to contribute much towards the cost of the Corps; some boys live at a distance, and so are not readily available for training outside normal school hours, while cadets in uniform may not always meet with approval in the streets. Lastly, the average leaving age of the boys may be too early for them to derive full benefit from their O.T.C. training. Nevertheless, such a school may furnish voluntarily two or more platoons of an efficiency which may go far to counterbalance lack of numbers. In these schools, moreover, the O.T.C. affords a training in leadership, which tends to compensate for the absence of a prefectorial system.

On the other hand, there is the O.T.C. unit of the large public school where boys are mostly boarders, and where parents are able to make more generous contributions to the cost of the unit. In addition, the governing body is probably more sympathetic towards the O.T.C. There are other advantages also; some of the preparation for Certificate "A" may be done in the evenings, provided that it does not encroach upon such institutions as the choral, dramatic and debating societies. Still, it has to be admitted that there may be upwards of a hundred senior boys reading for special examinations and University scholarships. But in the great public schools the majority of boys, as a rule, join the O.T.C. as a matter of course, so that it becomes possible to organize three or more training companies with a graduated programme of work and special platoons for cadets preparing for Certificate "A."

In such a corps, however, the proportion of officers is often lower than in smaller corps, especially as some are liable to be absorbed by special duties such as signals, shooting and band. A difficulty then arises in the provision of adequate supervision of training, especially when section and platoon leading is being carried out. Such a corps can also usually afford to pay for the services of two or more sergeant-instructors. This luxury of a sergeant-instructor is often denied to a small corps, unless employment can also be found for him in some other branch of school work.

Both types of school usually find difficulty in the lack of adequate ground for training. The small corps in the industrial centre may be at some considerable distance from open country, while the public school with the large corps may be situated in the country yet may find it impossible to practise widely-dispersed formations with bodies larger than two platoons, unless situated near a large public common.

# THE OBJECT OF THE O.T.C.

Briefly stated the object of the O.T.C. is to impart such training that:—

- (a) A very large percentage of its members—provided they are physically fit and of suitable age—could, after a few months of polish in special cadet battalions, receive commissions in a time of national energency;
- (b) As many cadets as wish to do so, provided they have the necessary qualifications, may take commissions in the Territorial Army or the Supplementary Reserve on leaving school.

With these objects in view as many boys as possible are encouraged to sit for Certificate "A" examination, since the average boy who has passed this examination can join a unit of the Territorial Army and soon do useful work.

#### THE STANDARD OF TRAINING.

The time factor is one of the most difficult problems with which an O.T.C. commander has to contend. Actually he may rely upon the whole of his unit being available for one weekly parade of one and a half hours about ten times in every term. In addition he may be able to hold a parade of his N.C.O's and some of his officers during one school period of some fifty minutes each week. This N.C.O's parade is extremely valuable, since so much nowadays depends on platoon and section commanders in the field. Thus it is essential that they should receive adequate coaching in the leading of their platoons and sections, as well as in the details of the weapon training which they pass on to the cadets. This system conduces to the risk that incorrect details may occasionally be taught by such N.C.O's, but this risk must be faced, since one of the

chief functions of the O.T.C. is to teach its members to lead and instruct. Hence, in view of the limited time available, it is imperative that too much should not be attempted, and that what is attempted should be done thoroughly.

The following scheme outlines briefly what is being done in the writer's contingent.

- (A) Cadets who are not yet N.C.O's are being trained :-
  - to take part in simple squad drill movements—a platoon for this purpose being treated as a squad—and, in the senior companies, in the simplest movements of company drill;
  - (2) to carry out arm-drill, the only movements that are taught being "Attention," "Stand at ease," "Slope," "Present," "Fix and unfix" and "Port";
  - (3) in all standing, kneeling and lying loading and firing positions, in the sequence of loading and unloading and in the rules of aiming. They are also taught fire orders, elementary care of arms and some idea of effective ranges and targets for rifles and Lewis guns;
  - (4) to take part in battle drill;
  - (5) to take part in the work of a section in simple tactical schemes, particular attention being devoted to the use of cover and to the proper handling of Lewis guns;
  - (6) to become familiar with the elementary rules of march discipline.
- (B) All cadets fire the miniature rifle course.
- (c) Cadets on becoming N.C.O's are taught in addition:
  - (1) to instruct their commands in the above drill movements—including arm-drill—and in weapon training;
  - (2) to lead their units in the above tactical movements;
  - (3) the simple principles of attack, defence and protection. The platoon is taken as the tactical unit, but cadets are expected to appreciate the role which the platoon would be taking in a company scheme;
  - (4) if time permits, these N.C.O's are given simple lectures on the functions of the other arms.
- (D) For cadets who wish to sit for Certificate "A," the above scheme as laid down for N.C.O's is consolidated and extended by:—
  - further details of the organization and functions of the other arms and the necessity for co-operation;

- 58
- (2) the solution of platoon tactical schemes, as far as possible on the ground;
- (3) elementary map reading, including the prismatic compass;
- (4) elementary hygiene and such subjects as the ammunition and ration supply within a company on active service, messages, orders, etc.

This curriculum represents an attempt to combine the steadiness, produced by performing the minimum of drill, with an endeavour to interest the cadets by teaching them the correct use of the rifle and the Lewis gun, as well as by giving them a simple grounding in tactics and in the elements of leadership and instruction. Close order drill has consequently been cut down to a minimum, although a certain amount remains essential to preserve that elementary smartness which tends to disappear when prolonged spells of weapon and tactical training are practised.

The average life of a cadet in a large public school corps is between four and five years, of which the first year is normally allotted to close order drill, battle drill, physical training and instruction on the miniature range. A very little arm-drill may be done, but rifles are not usually carried at this tage. In the second and third years progress is made with the general programme outlined for the cadet. He is then encouraged to qualify for Certificate "A," and the majority of the N.C.O's is drawn from cadets who have passed at any rate the practical part of this examination.

# CERTIFICATE "A."

A very happy medium appears to have been reached in the scope and standard of this examination. Formerly questions were set which involved a knowledge of the tactical handling of units larger than a platoon and of the co-operation of most other arms. The percentage of marks required for a pass was very low. Quite rightly, the standard required for a pass has been raised, while the syllabus of tactical work has been confined to that of the platoon and section. Co-operation has been reduced to that between infantry, cavalry and field artillery. Good questions are set on map reading and hygiene. In the practical examination a candidate is no longer expected to command a platoon in company drill. Greater stress is laid instead on his ability to handle a squad and to instruct in weapon training. Intricate questions on the mechanism of the rifle are no longer asked. Training has, consequently, become more thorough; it has gained a more permanent value. Still it may be objected that questions are occasionally set which put a high premium on memory knowledge of more or less abstruse facts. Thus it seems

hardly necessary for a cadet to know "the order of march of a pack battery, R.A." On the other hand, cadets should know that spaces exist between formations on the march, also the reasons for these spaces, although their memory should not be burdened with exact distances. It is perhaps not easy to draw the line; but a cadet should know the pace at which infantry and cavalry can move under different conditions.

All officers interested in O.T.C. work realize the value of the excellent blue books which are published after each examination. However much tactical principles may be studied, doubt is often left as to their right application. In this respect the answers suggested in these books are a real help.

# THE PREPARATION OF CANDIDATES FOR CERTIFICATE "A."

In the actual preparation for this examination a certain amount of cramming is unfortunately inevitable. Most candidates are usually preparing for some other examination at the time, and so prefer to devote only one term to it. The experiment of spreading the work over two terms has not proved very satisfactory, as cadets therebytend to lose interest in the work. As it is, the time which is available about four weeks before the practical and seven weeks before the written examination—is too short. As far as drill is concerned, the difficulty with a large number of candidates, say sixty or more, lies in providing each one with enough practice in front of an actual squad. If the candidates are broken up into squads of approximately ten each, then every cadet gets a chance in the course of one parade to handle the others. But adequate supervision of these squads may be difficult, in view of the limited number of officers and sergeant-instructors in a contingent, since most of them may be employed at that moment with the remaining cadets.

In the writer's contingent the problem has been solved by the local regimental depot sending over each week its instructor N.C.O's to supervise these squads at drill and weapon training. The contingent pays for travelling and provides tea. This method cannot apply to schools which are situated far from a depot, or which are handicapped by lack of funds. But the system can give excellent results. The cadets greatly appreciate the presence of the regular N.C.O's, while the latter enjoy their new experience. The only danger lies in the tendency of such instructors teaching too slowly, not realizing that the cadet is more receptive than the regular recruit, and that only a fraction of the time available for regular recruits can be devoted to cadets. To supplement these parades there are usually voluntary parades of about thirty minutes duration after morning school under one of the sergeant-instructors.

For the written papers one evening lecture of an hour's duration is given each week in the cadets' own time. One officer usually undertakes to give a series of lectures to a class of about thirty cadets. These lectures may be supplemented by voluntary work on map-reading after morning school. When the practical examination is over, the time hitherto devoted to drill and weapon training can be given to simple tactical schemes on the ground.

One real difficulty still remains. The syllabus for the Certificate "A" examination is comprised between the covers of at least four or five official manuals. It is just possible to cover the ground with lectures and out-of-door work, but many cadets would welcome a single book which could be used for revision work. Is it too much to ask that a special manual be published for the use of O.T.C. cadets? Such a work might also be of use to junior N.C.O's of the Territorial Army. Many O.T.C. officers of experience would willingly co-operate with the General Staff in the production of such a book.

# SPECIAL DUTIES.

These are apt to take up considerable time, while the outside world is often inclined to pass judgment on a school contingent solely on its band or the performances of its shooting VIII and Pair at Bisley. The special duties can, in some cases, possess real value if rightly used, but they must be regarded as subsidiary to the main object.

- (a) Shooting.—All cadets should qualify each year on the miniature range, which should be open for practice under supervision as often as possible, just as fives or racket courts. Facilities should be found for every senior cadet to fire ball ammunition, though this may be difficult in the case of schools situated at a distance from an open air range. However, some schools now possess a 30-yards range for use with ball ammunition, or have access to such an one. By these means the general level of shooting in a school is certain to improve, and this should react favourably on the standard of the VIII and Pair. The primary consideration, however, must remain the maintenance of a good standard of shooting throughout the unit. There appears to be a lamentable tendency in some quarters to concentrate almost exclusively on the shooting teams.
- (b) The Band.—Bands are expensive to maintain, while their members are apt to be lacking in the real training for which the O.T.C. exists. Small corps cannot afford them, and it has been said that it would be as well if they were suppressed, or at any rate restricted to a few drums and fifes. It takes a long time to assemble a creditable band, and even when this has been accomplished, its members may leave school and

the work must be done all over again, unless of course a large reserve is maintained. Keeping a large reserve usually means that an undue number of cadets is not receiving the normal O.T.C. training. Schools can only be justified in maintaining bands if their members are sufficiently keen to make themselves efficient cadets as well as musicians. Good bands undoubtedly tend to raise morale; a poor band is treated by the rest of the contingent as a joke.

(c) Signals.—A small efficient signal section may serve two purposes. Firstly, it is a means of usefully employing senior cadets, often of scientific ability, who have completed the normal O.T.C. training course but do not possess the requisite qualities to make efficient N.C.O's. Secondly, it is the only branch of the junior division which can contribute to a specialist branch of the Army. In any case its members must undergo adequate tests at intervals; otherwise the section is apt to be regarded as a haven of rest for those who find the ordinary training too irksome.

Most schools now appear to be giving up their O.T.C. wireless sections. When these were instituted some eight years ago facilities for wireless work were not so readily available as they are to-day. Hence these sections were at that time very popular. They have now lost their attraction.

## CAMP.

Camp serves to bind together the year's work of the senior cadets in the following ways:—

(1) by affording opportunities to practice manœuvres which are impossible during the rest of the year on account of lack of

ground or numbers;

- (2) by giving cadets an opportunity of witnessing movements, etc., carried out by experts, and seeing something of the work of other arms;
- cadets gain the experience of living under canvas and of "rubbing shoulders" with fellows from other schools;
- (4) demonstrations form an important part of the programme. These should be designed to show:—
  - (a) the platoon as an advanced guard, in attack, in defence or on outposts;
  - (b) the fire-power of rifles, Lewis guns and machine guns;
  - a section of tanks, a troop of cavalry, a section of field or pack artillery or a squadron of aeroplanes in action;
  - (d) drill and guard mounting.

It seems that (a) is the most important, and should never be omitted from any camp programme. Even when the work begins with company training—as many authorities are inclined to suggest should be the case—(a) is of great value since it forms the basis of all infantry work in the field. If facilities for it exist, (b) ranks next in importance. Only those who have had active service experience, or who have witnessed such demonstrations, can appreciate the "stopping power" of bullets and the relative fire-power of the three weapons mentioned. (c) gives cadets a chance to see something of the other arms about which they are expected to display a knowledge in answering Certificate "A" questions. Voluntary demonstrations of drill by regular soldiers or by gentlemen cadets from the R.M.A. or R.M.C. serve to show O.T.C. cadets that their own standard of drill can be considerably improved. Nevertheless, nothing which is the speciality of some particular arm or unit should be stressed too far on these occasions, while demonstrations of experimental arms should not be given. This may be illustrated from the following instance. A recent display of Carden Loyds carrying Stokes' mortars produced a tendency among the cadets who witnessed it to solve all tactical difficulties by invoking the aid of this new weapon at the expense of existing machine-guns and pack artillery.

As far as the actual training in camp is concerned, it has to be remembered that most units spend the greater part of the year on section and platoon training. The cadet is thus apt to be disappointed if in camp he has to spend more time rehearsing what he considers he already knows. Let there be one day on which platoon training is revised, especially if this can be done after a good platoon demonstration. Units can then proceed to company training and conclude with two days of battalion exercises. In arranging the actual exercises, the greatest value to all ranks will result from schemes which have been carried out to a set plan in a series of well marked stages. This method may cost the organizers a great deal of time, but such efforts are always much appreciated.

Since it is customary for senior cadets to command platoons, there is usually a large surplus of O.T.C. officers in camp. No camp should, therefore, be without its tactical courses, of which there should be two distinct types: (a) for subalterns and (b) for captains and field officers. Could it be possible to arrange for promotion examinations for officers to take place in camp, or at any rate for candidates to proceed, towards the end of camp, to some common centre where a board could be established? Finally it might be urged that anything which can be done to occupy the off-parade hours, concerts, boxing, band playing, is welcomed by cadets and schoolmasters alike.

# LIAISON WITH THE REGULAR ARMY.

The bond between the Regular Army and the O.T.C. has been considerably strengthened during the last few years in the following ways:—

(a) officers from regimental depots frequently visit their affiliated schools and assist in getting out training programmes or in planning programmes of instruction. Such officers are also admirably suited for detecting weaknesses in the practical examination of Certificate "A" candidates;

(b) regular officers assist in drawing up schemes for field days and

carry out much of the umpiring;

(c) depots supply instructed N.C.O's and demonstration units when possible;

 (d) regular officers are often willing to judge a school corps' competitions or to referee inter-school shooting and boxing;

(e) many schools arrange matches with local depots and units.

No pains should be spared to ensure that this liaison may become even closer. There is possibly a tendency on the part of the amateur O.T.C. officer, especially if he lacks war service, to be somewhat shy of the professional soldier. Much can be done to break down this barrier in camp, where perhaps a frank discussion between regulars and amateurs, even in the mess-tent, will be found most valuable.

## CONCLUSION.

There are many other problems such as the provision and training of the O.T.C. officer, the organization of field days and the position of the school sergeant-instructor of which space forbids a discussion. But there is one matter which must be touched upon; that is the attitude of the cadet himself towards the O.T.C. Few boys will ever admit that for them the O.T.C. is a popular institution. They will say it is a thing to be taken along with many other necessary evils in the school curriculum. Nevertheless, to those who may care to probe a little below the surface the following appears to be a true estimate of the cadets' real attitude. The recruit rather likes his first year in the corps, probably because he has put on uniform and fired a rifle for the first time. His second year he genuinely dislikes. However much one tries to make it otherwise, there must exist a certain amount of drudgery at this stage. Presently, however, the cadet becomes an N.C.O., and so has to do things for himself and lead others. Then, it seems, he really begins to enjoy the work; consequently his efficiency increases rapidly. Surely this is as it should be. The cadet responds readily as soon as initiative and leadership are required of him, and is this not one of the great reasons for the existence of the O.T.C.—namely that it helps to produce leaders?

# POWER FUEL FOR THE SERVICES

By J. S. S. Brame, Esq., C.B.E., F.I.C., F.C.S., Professor of Chemistry and Metallurgy at the Royal Naval College, Greenwich.

On Wednesday, 26th November, 1930, at 3 p.m.

Engineer Vice-Admiral R. W. Skelton, C.B., C.B.E., D.S.O., Engineer-in-Chief of the Fleet, in the Chair.

THE CHAIRMAN, in introducing the Lecturer, remarked that he was an acknowledged expert on his subject.

## LECTURE.

OIL.

A LTHOUGH rather alarming outcries about the possible exhaustion of the oil supplies of the world are raised from time to time, and although everyone realizes that the past and present prolific production must in time fall off, the increase of world production in the last decade is astonishing. In 1920 the world output was approximately 95,500,000 metric tons. In 1928 it was 185,000,000 metric tons, and the estimated production in 1929 was 207,000,000 metric tons, an increase in less than ten years of 117 per cent.

It is of interest to compare the production of coal with that of oil: the latest year for which this is possible is 1928, when the world's coal production was 1,235,638,000 tons; the oil production being 185,000,000 tons, or 15 per cent. only of the coal production.

The coal production of Great Britain is normally about 250,000,000 tons, an amount very considerably greater than the world's oil production.

Without considering in detail the oil production in different countries, it is of interest to note that the United States produce approximately 70 per cent. of the total oil, and that about 72 per cent. of that total comes from the Western hemisphere.

Turning now to the oil products imported into this country, and produced here from home materials (a small amount from oil shale), a

balance has to be struck between imports and re-exports, and allowance made for oil fuel supplied as bunkers for vessels engaged in foreign trade, to obtain a figure for home consumption. In addition to imported separated products, no inconsiderable quantity of crude oil is imported into the country (chiefly Persian oil) and refined here. The following quantities of crude oil were treated in Great Britain:—

hip is, of course, much more economic		1928
fired steamship, but nevertheless it ran		Gallons
Imported crude oil	755,170,000	649,160,000
Home produced shale oil	43,180,000	43,140,000
Total	708.350.000	602,300,000

It is unnecessary in a lecture before this Institution to consider in detail all the many petroleum products retained for consumption; it will suffice to deal with motor spirit, fuel oils (including "Diesel" oils) and lubricating oils. The retained balances giving the approximate home consumption are as follows:—

## Retained balances.

Motor spirit	1927 688,550,000 95,000,000	1928 813,140,000 gallons 115,000,000
Fuel oils: Retaine 1 Shipped as bunkers	1,770,000	1,508,000 tons
Total fuel oil	2,820,000	2,508,000 tons

On the assumption that some 750,000 tons of fuel oil are required for the naval Service in peace time, it may be computed roughly that for general purposes from three quarters to one million tons of fuel oil are used, figures which it is of interest to compare with the coal consumption for "manufacturing" purposes—70 million tons.

In time of war, whilst the oil requirements of the Navy are of paramount importance, the requirements of the Mercantile Marine must necessarily be but little less, since armed merchant ships as well as the vessels engaged in ordinary transport services will be largely dependent on fuel oil. Consideration must be given, therefore, to the ever-increasing use of oil in the Mercantile Marine, and to the provision for its transport in tankers, all of which are oil-fired or motor-driven.

In 1929 the gross tonnage of oil-burning ships was:—
Steamships ... 19,421,000 tons

Motor ships ... 6,628,000 ,,
Oil tankers 7,071,000 ,,

Approximately 28.5 per cent. of the vessels of the Mercantile Marine are equipped for oil burning, and 10 per cent. are motor vessels. According to Lloyd's Register the gross tonnage of the motor ships under construction in Great Britain on 30th September last was 637,154 tons, and abroad 922,180 tons, a total of 1,559,334 tons, figures considerably in excess of the gross tonnage of the steamships under construction. The motor ship is, of course, much more economical in the use of oil than the oil-fired steamship, but nevertheless it must be expected that the million tons of oil shipped for bunkers in ships engaged in overseas trade in 1927–28 must soon be very materially increased.

Having obtained some approximation of the requirements of oil fuel which have to be met, attention may now be given to motor spirit, and, because of their special importance, to lubricating oils.

The importance of aviation to the Services need not be emphasized, and with the increasing mechanization of Army transport the Service demands must be very great. It is not possible to give more than an approximate figure, but it may be taken to be not less than 6.5 million gallons, or about 8 per cent. of the country's total motor fuel consumption. Whilst it may be possible to supply reasonable quantities of motor spirit in the form of motor benzole, and also of fuel oils from home sources, it is a more problematic question whether satisfactory lubricating oils for turbines and internal combustion engines can be obtained from any other source than petroleum. Whilst lubricants fairly satisfactory for use in general machinery may be obtained from coal distillation products, lubricating oils for turbines and I.C. engines must have certain well-defined characteristics which similar oils from coal products do not possess.

In view of the fact that all petroleum products, with the exception of the small home production from shale, have to come overseas, possible interruption of supplies through any cause might prove a vital matter for any of the Services, and every avenue must be explored which may lead to the provision of some part at least of suitable products from home sources.

As far as free petroleum is concerned any expectation of home production has been pretty definitely ruled out as the result of the few experimental borings put in hand under the stress of war emergency.

## OIL SHALE.

The production of oil from oil shale in Scotland is an old-established industry, which, in spite of the severe competition of "free" oil, has managed to keep going, although with a considerably reduced output in recent years. For a long period a steady average of 3,000,000 tons

of shale was retorted annually, but the returns for 1926–1930 show just over 2,000,000 tons throughput, with the production of a little over 43,000,000 gallons of crude oil (say 170,000 tons). Refining losses are high, and the following quantities of refined products (computed on the actual yields recorded for the years 1924–25) would fairly represent the output:—

Tank and a second				Gallons	(EO CO31
Motor spirit				2,750,000	
Naphtha		10000		1,500,000	ed minel ver
Lamp oils		50 15		6,750,000	existing hon
Gas and fuel oils		-	27/00	14,500,000	(59,000 tons)
Lubricating oils	100	1915 - [9-1]		2,500,000	nod tas
Paraffin wax	1.0	570 · x 1	191.	Temperature 4	12,250 tons

An estimate of the total available oil shale in Scotland (excluding seams under 3 feet thick and yielding less than 19 gallons per ton) made by the Geological Survey was 601,886,000 tons, of which it was computed some 120,000,000 tons had been ruined.

Extensive deposits of oil shale outcrop in Dorset as the Kimmeridge beds, while the same beds outcrop again in Norfolk. Some attempts to work these beds in each county have been made but with no financial success. One outstanding difficulty is the high sulphur content of the oils, amounting to between 7 and 8 per cent., the removal of this having so far defeated the chemist.

An important point in connection with oil shale is the cost of mining, which, with deep seams, would be considerable; another that the spent shale is valueless, and all returns must come from the oil and wax and the high yield of sulphate of ammonia. The production of the latter by-product has been a great help in keeping the industry going. When the industry was at its zenith some 60,000 tons of sulphate of ammonia were produced annually.

## COAL AS A SOURCE OF OIL.

As pointed out in Report II of the Federal Oil Conservation Board (U.S.A., 1928), coal offers certain advantages over shale; deposits are more widely distributed, many are near important marketing centres, and the residual coke is available as fuel. On the other hand, shale deposits are less costly to mine and yield a greater quantity of oil.

The following is significant as being a recommendation of a Board in the greatest oil-producing country of the World:—

"The possibility that coal will be the source first to be drawn upon for supplementing the petroleum supply leads this Board to unite with the Naval Oil Reserve Commission in recommending the creation of two reserves of coal available for this special purpose. It is recognized that oil won from oil shale or coal will not be labour cheap like the petroleum now flowing from our wells, and that in time of war a nation's industry is short-handed. For this reason any reserve of raw material for national defence should be both strategically located and otherwise adapted to conserve man power."

The Royal Commission on Fuel and Engines for the Navy (1912-13) examined very exhaustively the possibilities of obtaining fuel oil from existing home industries, and concluded that:—

"the only means of doing so lies in the development of a new carbonizing industry founded on the distillation of bituminous coal at a temperature much below that used in gas retorts or coke ovens:"

and, since the possible oil production was only 5 to 8 per cent. by weight of the coal treated, the creation of a market for the other products of carbonization was necessary for the solution of the economic problem.

Distillation processes cannot be operated for oil alone, but must depend upon a market for the major products—coke and gas. It is necessary to emphasize at once that, whether carbonization of coal is carried out at high temperatures or low, the liquid products are tars, since they invariably contain not less than some 30 per cent. of pitch. Until this is removed (by distillation) the product cannot be described as "oil" which is at all comparable with petroleum. This will entail the disposal of large quantities of pitch and, with low temperature carbonization, most probably of tar acids, the markets for each of these possibly having to be developed.

# HIGH TEMPERATURE CARBONIZATION.

In discussing the possibilities of coal as a source of liquid fuels the present contributions of the existing coal and coke-oven plants are frequently overlooked, but their output, as shown by the following statistics, is substantial:—

Coal carbonized (1928)	Tons	Gallons of Tar produced
In authorized undertakings	 17,562,000	210,656,000
In private undertakings, say	 850,000	1,000,000
In coke-oven plants	 17,438,000	168,500,000
Total	35,850,000	380,156,000

Note.—Complete figures are not available for 1929, but the coal carbonized in authorized gas undertakings was 17,887,000 tons, and the tar 215,138,000 gallons.

An average figure for the quantity of heavy creosote oil to the Admiralty specification would be 30 per cent. of the crude tar, or about 115,000,000 gallons (say 540,000 tons). There is, however, a large export of creosote oil—about 40,000,000 gallons per annum, leaving in peace time a balance of some 350,000 tons in the country. With no allowance for its lower calorific value than petroleum fuel oil this is less than half the estimated oil requirements of the Navy.

n

1

d

n

e

t

f

S

s

1

е

e

Several thousand tons of creosote oil have been used by the Admiralty, it being customary to burn it with ordinary fuel oil. Here another important point arises: all fuel oils will not mix with creosote oils without the deposition of a thick bituminous sludge. Neither does the use of creosote oil promise any financial advantage, for September quotations were 3½d. to 4d. per gallon (f.o.r.), equivalent to 6o/- to 7o/- per ton.

In time of war no doubt the whole of the creosote oil could be made available, and perhaps a heavier cut made into the crude tar and possibly some 600,000 tons would be available.

Now let us turn from the heavy oil to the possible production of motor fuel from coal distillation. Already there is a large production of motor benzole as the following figures show:—

risin kellik limilioni kempurakinto ara diings have beer kepadanioo	Gallons of Benzole	Gallons of Motor Benzole
1928	32,000,000	28,500,000
1929	36,000,000	32,500,000
Most of this is used in admixture w	vith petroleum	spirit.

On the figures for the coal carbonized this is a yield of less than one gallon per ton of coal, but by gas stripping, as was made compulsory during the war, it would be possible nearly to double this yield. Under war conditions, however, there would be large demands for benzole and

#### LOW TEMPERATURE CARBONIZATION.

toluole for explosives.

By carbonizing bituminous coals at about 600°C. an increased yield of tar from some 12 gallons per ton to 16 or 18 gallons is obtained. This low temperature tar is of a very different character from the tar from high temperature carbonization, and on distillation it yields "tar oils," which in character are a nearer approach to petroleum products than similar distillates from high temperature tar.

It was to low temperature processes that Lord Fisher's Committee looked in 1912-13 as the most likely means of developing a reasonable home production of oil, and the method has many enthusiastic supporters to-day. It has been before the public for twenty years, and has not

lacked advertisement, but progress has been practically negligible in comparison with the progress of high temperature carbonization, for 2,000,000 tons more coal was carbonized in authorized gas undertakings in 1928 than in 1910. Some two hundred different forms of plant have been proposed, yet to-day there are only four concerns in a position to deliver a steady supply of low temperature coke and still fewer able to deliver a reasonable quantity of tar oil fuel.

On the average yield of crude tar from a good quality bituminous slack of 18 gallons per ton the following products would result on the simplest refining to give fuel:—

The outstanding characteristic of the crude tar oils, a distinguishing feature from petroleum fuel oil, is the high percentage of tar acids, in some cases not less than 40 per cent. Whilst these tar acids detract from the thermal value of the oils by 25 B.Th.U. per cent., for burning purposes their presence may be open to little objection, but in Diesel type engines experience is not favourable, and most authorities consider that their removal would be necessary. Starting difficulties are experienced owing to their high spontaneous ignition temperature, and with air injection of the fuel, detonations have been experienced.

As emphasized in the Report of Lord Fisher's Committee (1913), the success of low temperature carbonization must depend upon the development of a market for the main product, the semi-carbonized coke, of which not less than 14 cwt. per ton will be produced. It is unlikely, in spite of its advantages as a smokeless fuel, to have a market value in excess of household coal, and, as Mr. S. J. M. Auld has stated recently, "there is no premium for the semi-coke, and the value of the by-products must pay both for the loss of B.Th.U. due to carbonizing and the cost of processing." On the other hand, by treating small low-priced coal, not readily marketed as fuel for domestic purposes, and producing a good lump smokeless fuel, a very considerable enhancement of value results.

If the process succeeds commercially, so far as producing a reasonable output of tar oils, other economic questions will arise, amongst them the disposal of large quantities of soft pitch and possibly a very considerable quantity of tar acids. Morell and Egloff have recently stated the position thus: "The economic success of low temperature carbonization depends upon the profitable disposal or utilization of the tar, and this in turn depends in large measure on the profitable utilization of the tar acids."

The present high temperature tar furnishes all the tar acids which the market demands, and alternative outlets will undoubtedly have to be found. A line of attack which is being pursued is that of "cracking" (a similar process to the cracking of heavy petroleum oils for the production of petrol), and one low temperature carbonizing company has already installed a plant in the North of England capable of treating some 50,000,000 gallons of low temperature tar oils per annum.

According to Morell and Egloff, by cracking the 65 per cent. yield of acid oil per ton of tar, 25.3 per cent. of acid-free motor fuel was obtained, equal to 16.4 per cent. of the whole tar oil.

Auld gives the following results for cracking the heavy oil as well as separating the tar acids per ton of coal:—

	( Coke	· where be	14 cwt.	
Cracked	Total motor spirit		. 6.5 galle	ons
Tar	Fuel oil	politica of	. 2.5	Buch
lar	Tar acids	emzanyoC ad	. 2.0 ,,	Petrol
	Pitch	toricalo entali	. 75 lbs.	

# HYDROGENATION OF COAL (BERGIUS PROCESS).

In this process finely ground bituminous coal is mixed with a suitable oil to a thick paste and the mass forced into high pressure auto-claves and heated to a temperature of about 450°C. at pressures of from 2,500 to 3,000 lbs. per square inch, the auto-claves being filled with hydrogen gas. Probably half the coal substance is converted into liquid products, yields of 100 to 130 gallons per ton being obtained. Generally the material takes up about 4.5 per cent. by weight of hydrogen.

An experimental plant is installed at the Fuel Research Station, East Greenwich, which can treat about 66 lbs. of coal per hour. In Germany a plant capable of treating about 20,000 tons per annum has been erected. For a Silesian gas coal, Bergius has given the following yields:—

Liquid product: 140 gallons per metric ton of coal.

From this was obtained:—motor fuel, 40 gallons; Diesel oil, 50 gallons; fuel and creosote oil, 35 gallons. The treated mass contains from 10 to 16 per cent. of solid carbonaceous residue from the coal, and in the distillation of the tar products the pitch residue may be over 25 per cent.

Most optimistic claims have been put forward for the hydrogenation process, but little information is available about results obtained on a reasonable scale. Several problems will have to be solved before it can be regarded as a commercial proposition for coal treatment.

# OIL FROM CANNEL AND KINDRED SUBSTANCES.

Cannel coals were very important in years past to the gas industry, and it is well known that cannel on distillation yields tars which, after removal of the pitch, are much more of the petroleum type than bituminous coal products, in fact there is often enough paraffin wax present to be troublesome yet not sufficient to be worth removing by treatment. Moreover, rich cannels yield highly. According to the Fuel Research Board Report (1929), a Welbeck cannel gave 51 gallons of tar per ton, about three times that obtainable from a bituminous coal.

Cannel occurs usually in rather thin beds, either above, below or distributed as bands in coal seams. Much gets mixed with the coal. Inferior grades, generally with a high ash content, are not brought to bank; if brought up and sorted out it goes on the mine dump.

During 1918, when the position as regards oil supply was critical, the Petroleum Research Department of the Ministry of Munitions reported on the possibilities of home production of oil, particularly from easily available material like cannel and "bastard" cannels, the "Jacks," "Batts," etc., of colliery spoil heaps. It was not considered that the recommendations could be acted on, and the Report was not published.

With a conviction that something could be done and should be done to meet the situation which arose, the Institution of Petroleum Technologists appointed a Committee "to obtain evidence in respect of the quantity of cannel coal and allied minerals available . . . and to formulate a scheme for the utilization of such supplies."

Briefly the Interim Report stated that :-

- (1) Material existed from which 15 to 80 gallons of "oil" per ton could be obtained, giving 8 per cent. of spirit and 50 per cent. of fuel oil per gallon.
- (2) At least 10,000 tons of retortable material could be assembled daily, which, with an average yield of 30 gallons per ton, would yield some 400,000 tons of crude oil annually.

It was recommended that 127 batteries of retorts should be erected in suitable localities. The problem of disposal of the several kinds of residue, ranging from good smokeless fuel to material high in ash, was also dealt with, it being pointed out that "the utilization of the large quantities of residues should greatly facilitate the schemes for the generation of cheap electrical power." Thus the scheme was to be "an immediate war measure," and "a permanent commercial undertaking and a measure of reconstruction."

The Government reply to the recommendations was the appointment of a Committee presided over by Lord Crewe, and this Committee furnished a Report (Cmd. 9128, 1918), its main points being:—

- (1) The present production (of canneloid material) was 2,000 tons per week, practically all of which went to gas works.
  - (2) Cannel mixed with ordinary coal would require sorting, a process entailing time and labour. The mines are at present short of labour, and increased output of cannel can only be obtained at the expense of the coal output.
  - (3) "Jacks," "Batts," etc.—No doubt considerable quantities are lying in mine spoil heaps, but in order to obtain them additional labour would be required; possibly some dangers in opening these heaps existed.

"We consider, therefore, that the amount of cannel and kindred substances which could be obtained cannot be said to approach the figure mentioned (12,700 tons daily) in the Petroleum Research Department's Report."

The fact should be emphasized that the quantity estimated as "not obtainable" in no way contradicted its existence and availability under favourable conditions.

Another point of great importance at that time was the provision of material for the suggested plants, particularly iron and steel. On this the Crewe Committee remarked: "At the present time and during the past year or more, when labour, skilled and unskilled, and constructional material of all kinds have been difficult to obtain for the most urgent war needs, the undertaking would have been well nigh impossible."

Summarizing the serious objections to the scheme, they were:-

The erection of large units could not be justified until success had been demonstrated on a reasonably big scale; a large expenditure would be involved out of all proportion to the quantity of oil which could be produced; labour would be diverted from the production of coal.

The Production Department of the Ministry of Munitions decided on the erection of thirty retorts at Nottingham. (This proposal was apparently not carried out). Also trials had shown that existing vertical retorts at gas works could be adapted to distil cannel, and results were fairly successful, 21 gallons of dehydrated tar per ton of a "bastard cannel," or about 17 gallons of fuel oil, being obtained. The crude oil was stated to require very little treatment to give a satisfactory fuel oil. Such oil was tested by the Admiralty at Haslar and found suitable for admixture with fuel oil in certain proportions.

I would urge that the very cogent reasons for not carrying out this war-time scheme for the production of oil from cannel and kindred substances, which were admittedly irrefutable arguments against its adoption while a great war was in progress, are to-day equally adequate reasons for suggesting that the plan should be reconsidered. To-day unemployment is the outstanding problem before the country, and the coal trade is suffering badly; the iron and steel industries are at a low ebb. A leading article in the *Times* on 27th August last said: "A practical means of harnessing the unemployed to useful national service still awaits discovery." No one scheme can be expected to cope with the situation, but does any scheme promise a more practical and at the same time *productive* solution than the utilization of these potential oil sources. I suggest that it at least demands the fullest exploration.

Before the end of the year a plant should be working at Belvedere (Kent) on some of the rich cannels from Argyll and Flint. The Argyll deposits will be shipped from Campbelltown; they lie about five miles to the West. The Flint deposits are described in the Mineral Resources of the British Empire thus: "a special feature of the Flintshire field is the cannel coal found at Leeswood, near Mold, and other places, and celebrated for its high gas producing qualities." The Belvedere plant is designed for a throughput of 100 tons daily, and the working results should prove very instructive.

It is remarkable how easily the sense of proportion is lost in discussions on the production of oil from coal, cannel and other bituminous minerals. The Crewe Committee considered that 20,000,000 tons of coal would have to be retorted to give from 1,000,000 to 1,500,000 tons of oil. If all the creosote oil obtained from the 36,000,000 tons of coal carbonized at high temperatures in 1928 was available for fuel, assuming this to be one-third of the total tar, some 600,000 tons of creosote fuel oil would have been obtained, which, because of its lower calorific value, would be equivalent to 500,000 tons of petroleum fuel oil, a figure considerably below Admiralty requirements alone.

From cannel of low grade, about the average probably obtainable throughout the coal fields, some 30 gallons of tar per ton might be obtained. This, after removal of light oil, to give the required flash point, and the pitch, might be expected to yield 20 gallons of fuel oil; so that about 10 tons of cannel would produce 1 ton of prepared fuel.

Low temperature carbonization does not produce an appreciable quantity of oil in relation to the country's importation. With the most optimistic forecast if, say in the next ten years, 20 per cent. of the domestic fuel was replaced by low temperature smokeless fuel, 7,700,000 tons, this would entail the treatment of 10,000,000 tons of raw coal.

A yield of 18 gallons of tar per ton is a generous estimate, and this would yield approximately:—

The crude tar oil would be equivalent in calorific value to about 470,000 tons of petroleum fuel oil. If it were considered necessary to remove the tar acids from the crude tar oils the neutral oil produced would be about 427,000 tons, and tar acids 120,000 tons.

A great deal has been said on the production of motor spirit from coal, particularly by low temperature carbonization. From data previously given, 32,500,000 gallons of motor benzole was produced in 1929 from high temperature carbonization, which was under a gallon per ton. From the figures above for low temperature spirit (2.85 gallons per ton), one is tempted to parody the familiar advertisement of "an ox in a teacup" with "a ton in a petrol tin." The airship "R.100" started on her flight to Montreal with 10,450 gallons of petrol. On the basis above this would be equivalent to the spirit from 3,700 tons of coal.

Certain important points require emphasizing. To begin with, carbonization is not favourable to the economical utilization of our coal resources, for if coal is replaced by an equal weight of smokeless fuel it means 100 tons of coal used to produce about 70 tons of smokeless Again, unless the main product (coked material) and the byproducts have a special economic value other than as fuel, or, if as fuel, they can be given higher "availability," that is, used with so much higher thermal efficiency that the inevitable thermal losses in the processing and the fuel expended in the process are more than compensated for, the process cannot be thermally economical. From the financial point of view, unless the value of the coked product, the gas and the tars together, show a greater return than the cost of the raw coal, the fuel consumed in processing, working costs, capital costs and depreciation of plant, there can be no margin of profit. So far no financial statement for a plant working commercially has given a favourable answer. If the tar oils can be regarded only as fuel oils, as is the case now, their economic value as fuels will be determined largely by the supply and prices ruling for similar petroleum products. With interruption of petroleum supplies their value would be on quite a different basis.

<sup>&</sup>lt;sup>1</sup> Figures based on yields quoted by Messrs. Sinnatt and King, of the Fuel Research Board; their estimate of yield per ton of coal was, however, only 16.5 gallons.

## SYNTHETIC FUELS.

The question is often asked whether science cannot give some promise of the production of fuels without such direct recourse to existing fuels. Alternatively, whether science cannot so improve the utilization of existing fuels that their "availability" may be so improved that it would pay to treat them. In a partial way carbonization does this, but if coal could be practically wholly converted to liquid, and perhaps gaseous products, it might be more serviceable to man.

On these lines the production of liquid products, some of which have undoubted fuel value, from water gas and hydrogen, are of most interest. On the Continent F. Fischer and his colleagues have been working on this problem for years, and numbers of patents have been taken out, notably in the name of the great chemical firm, the Badische Anilin und Soda Fabrik. Water gas is a mixture of (theoretically) equal volumes of carbon monoxide and hydrogen, and millions of cubic feet are produced in gas works to-day by the action of steam on white hot coke. Interaction between carbon monoxide and hydrogen under pressure, or in the presence of suitable catalysts, yields various liquid products, some at least promising to be available as internal combustion engine fuels. Methyl alcohol is produced in quantities from water gas to-day on the Continent, but there are objections to its use as fuel. "Oily" products are also obtainable, and a successful plant for production on a small scale of a liquid mixture which Fischer has named " synthol " has been erected.

Up to the present these synthetic processes are mainly laboratory processes, and, with the exception of methyl alcohol, have at the most produced pounds or even ounces, while commercially tons and thousands of tons have to be thought of. Nevertheless, these developments are of extreme interest, and open up such a possibility as Fischer suggests of schemes for the low temperature distillation of coal to produce gases and "oil" products, followed by the gasification of the coke to produce water gas, from which its synthetic oil products would be obtained. However, as long as the oil fields of the World are providing such adequate supplies, and, next to petroleum, oil shales, coal and cannel offer only an alternative method of producing "oils," it seems unlikely that these synthetic fuel processes can compete seriously with the others.

# ALCOHOL FUEL.

This lecture will probably be considered incomplete if some reference is not made to alcohol as a fuel. It is the only fuel material which man can manufacture in any quantity without recourse to existing fuel materials. In admixture with other low-boiling liquids it has proved

itself as a successful fuel for internal combustion engines. But, as it is generally agreed that the production in bulk can only be carried on for fuel purposes in tropical regions, with the luxuriant growth of vegetation of a suitable character, or from waste products in the wood pulp industry, or the fermentation of waste molasses, etc., all such supplies would be subject to sea transport and run the same risks of interruption as petroleum products. Home production in quantity would involve encroachment on food products, starchy material which would yield fermentible extracts, and this automatically rules out alcohol, especially in time of war.

## CONCLUSION.

Whilst with the present enormous output of petroleum and current prices for its products no alternative production of liquid fuels from other sources (except perhaps tich oil shale) may prove a successful competitor, or provide what may be termed an alleviating quantity, the position of any country dependent on external supplies for its Service operations is more or less precarious. The situation is only partially met by enormous storage provision. Whilst abundant raw material in the country can provide an alternative, although perhaps not financially able to compete in normal times, it surely should not be left largely undeveloped until the emergency arises, when, as happened in the Great War, other considerations completely blocked the way to development.

## DISCUSSION.

ENGINEER CAPTAIN W. ONYON, R.N.: Five years ago a lecture was given here dealing with the world's oil supply, and it was then stated that 84 per cent. of the world's supply of oil came from the North American continent. I am glad to hear from the Lecturer this afternoon that that figure now stands at 72 per cent.

Although the position has changed greatly since twenty-three years ago, when Diesel generating engines were introduced in the Navy in the "Dreadnought" and "Invincible," it is still necessary to use a different quality of oil fuel for those engines from that used under the boilers. But I am sure that we do not want to carry on board ship two sorts of oil fuel, and I look forward to the time when we can carry one sort of fuel which will be equally suitable for burning under the

boilers and using in internal combustion engines.

I understood the Lecturer to say that it would be more economical to use fuel oil in an internal combustion engine than under a boiler. I think that wants qualifying, because there is a considerable difference in the price that you pay for so-called Diesel oil and boiler oil. If you look in the latest list of oil bunkers, which I took to-day from "The Shipping World," you will find that in the reports of the United Kingdom the difference in the price is 22 per cent. If you go to America, New York and North American ports, you will find the difference is 90 per cent., and if you go to the East, Bombay, Calcutta or Singapore, you will

find that the difference is only about 7 per cent. This seems to indicate that the higher grade oils come from the East, and that most of this difference must be due to freight.

No doubt the Lecturer will tell us that as engineers we ought to make our engines suit the fuel, but I am not quite sure that that is right. I think probably in the course of years we shall be able to refine these oils abroad, as they do in Trinidad now.

VICE-ADMIRAL W. H. D. BOYLE: In this theatre last year a gentleman lecturing on a subject similar to this lecture made the statement that we could, if we were prepared to put down the money, erect a plant and get all the oil we wanted from the coal produced in this country. I would like to know if Professor Brame is of the same opinion?

Another question I would like to ask is what percentage of the oil at sea, which is being carried hither and thither about the world, could be used by our own cruisers or other cruisers fuelling at sea, in the same way as in the last war cruisers stopped ships and took the coal out of them? I understand that a certain amount of the crude oil is too dirty for such use, but that some of it could be used.

CAPTAIN E. ALTHAM, R.N.: I would like to ask whether the oil which we can produce from home resources is of such a quality that it could satisfy all naval requirements; that is to say, is it suitable for such various uses as boiler oil, Diesel engine oil, and lubricating oil?

Another potential fuel to which the Lecturer did not allude, probably because it is outside the scope of his subject, is vegetable oil. One realizes that this is not suitable for most types of Service machinery, but possibly it might be used to some extent in case of emergency.

LIEUT.-COLONEL W. H. JONES: I think the Lecturer classified fuel oils under their headings as residue oils, crude oils, gas oils and creosote oils. Might I ask which of those are suitable for being burned under steam boilers and which are suitable for internal combustion work? If one could judge which particular grades of oil were suitable for the various classes of machinery it would be enlightening.

# THE LECTURER:

The Lecturer, in reply, said: Perhaps I can cover two or three points in the discussion by saying a word in general about the suitability of different oils for use for burning and for internal combustion engines. A residue oil is an oil which has not been distilled. It is the residue after distilling off from the crude oil the motor spirit, the kerosene and gas oil to a certain point—generally to a point which will give a flash point sufficient to meet the specification requirements. That flash point for general use is 150°F. A residue oil contains any bituminous substances which were present in the crude oil and in a more concentrated form, because probably 20 or 30 per cent. has been "topped" off. Broadly speaking, the heavy oil engine burns a distillate oil, because that distillate oil is free from these asphaltic substances present in a residue oil. I do not think there are many residue oils which are likely to be suitable for continuous use in a marine Diesel engine running day in and day out without interruption.

Creosote oil obtained from tars is a distillate oil. It has been distilled off from the pitch; but the difficulty of using it in engines of the Diesel type is that ignition in these engines depends upon the air being sufficiently highly compressed to raise its temperature well above the ignition point of the injected spray of oil.

The ignition point of creosote oil, or any oils obtained from coal tar, is so much higher than petroleum oil that it is unsuitable for use in Diesel engines, because it does not fire regularly. It is possible to start up on a petroleum oil and then, when the engine is properly hotted up, to switch over to a tar oil, providing that the load does not fall below 70 per cent. of full load. Owing to the shortage of petroleum during the War, an Order in Council was passed which compelled the conversion of Diesel engine sets throughout the country to use tar oils; that was done by having two oil pumps and two admission valves, and using a small quantity of petroleum oil injected through its own valve into the cylinder, at the same time that the main valve opened and admitted the main charge of creosote oil. Perhaps that clears up this point about the difference of the oils.

Captain Altham asked about vegetable oils; these are, broadly speaking, far too costly and scarce to be considered as fuel oils except when they are more or less waste products. Palm oil has been used in Diesel engines on the West Coast of Africa, where all petroleum fuel oils are subject to high transport rates. At some of the whaling stations whale oil, mainly waste, has also been used successfully in these engines. But in this country we really are very small producers of vegetable oils, and practically the whole of the seed which is treated for oil extraction is of foreign origin,

As to the possibility of a cruiser which had run short of fuel going alongside a tanker and helping herself to oil; a good deal of the oil carried by tankers could undoubtedly be used in emergency on a warship. The greatest difficulty would not be in burning it, but in handling it, because so much of this oil is of a very highly viscous nature. In connection with this it is interesting to note that in big ships like the "Mauretania" and "Aquitania," which have been converted from coal to oil, miles of steam piping are fitted in the double bottoms in order to keep the oil warm enough in winter for it to be handled by the pumps and put to the boiler rooms for combustion. But really there should be no difficulty, with the very efficient Admiralty burner, in burning any of these oils, provided it was fluid enough to handle.

Engineer Captain Onyon raised the question of the oil supplies of the world and their general location—their port of origin as it were. The situation is always changing, and I have not got the statistics of oil production at hand, but I did think it was a sufficiently important matter, perhaps from a strategic point of view, to point out that 72 per cent. of production is to-day from the Western Hemisphere. He also mentioned the difference in price of Diesel fuel and of oil fuel, and suggested that because of this difference there was no very great advantage in Diesel machinery for marine use. That was an important point, but the point I was trying to make was that with the general increase in the use of oil at sea, whether it is an increase of Diesel engine ships or whether it is an increase in oil-burning ships, we are bound to expect a higher and higher consumption of oil fuel at sea, and that this is a contingency which must be borne in mind in a maritime country where a great part of our shipping will be dependent very largely upon oil.

The same speaker alluded to the possibility of refining the oil used in this country before it is shipped from abroad. Actually refined products are already imported to a far greater extent than the crude oil. Except the Anglo-Persian Oil Company, very few companies import crude oil into this country and refine it here. If they import, it is more often topped oil—that is oil from which the spirit fraction has been removed, because it is not subject to such onerous restrictions in the matter of shipment and storage and handling as the crude oil.

Admiral Boyle put a question which is a very important one: "Could we produce all our oil from the coal of the country?" From the figures I have given I think you will realize that it would mean putting up enormous plants. We carbonize to-day 37,000,000 tons of coal out of a home consumption of from 185,000,000 to 187,000,000 tons. If we were to double and treble that carbonizing plant (which we must remember meets the commercial requirements to-day for the gas industry, and we also have all the requirements of the great iron and steel industries in normal times met by the operations of the coke-oven plants; between them they are carbonizing 37,000,000 tons of coal) we must still look for some other industrial applications of coal, in order to secure anything like the quantity of oil that we require. About 70,000,000 tons of coal are used annually for manufacturing purposes. If we undertook to carbonize it, we should have to erect most extensive plants, and there would still remain the problem of how to make use economically of the coked residue and the many other products of carbonization. The problem is an economic one. You would have to extend your plant so enormously that the game would not be worth the candle; and from a financial point of view the last word rests with the people who produce oil in such enormous quantities and send it into a country probably at low prices. In practice it would be extremely difficult for a carbonizing industry on that gigantic scale to keep going.

The production of lubricating oil has been referred to. Although lubricating oils can be produced from coal distillation products, and some of those lubricating oils are satisfactory as far as general machinery lubrication is concerned, it is generally agreed that we are unlikely to obtain from coal oils of the requisite stability to stand up to oxidizing conditions at high temperatures, and at the same time possess the necessary lubricating power for use in internal combustion engines. As far as turbines are concerned, the very essential thing is a rapid demulsifying figure of the oil from water. I do not think that that can ever be obtained except by the use of very highly refined petroleum products,

### THE CHAIRMAN:

This subject is one of such enormous breadth that I am quite sure Professor Brame will agree it would be impossible to cover the whole of it in the course of an hour and a short time for discussion.

The Lecturer started by referring to the deposits, or lack of deposits, of petroleum fuels in this country, and mentioned the Kimmeridge clay which runs from Dorsetshire to Norfolk. It is a matter of historical interest that a famous naval officer—Captain Hardy of Nelson's days—was one of the first persons in the last century to investigate the possibilities of this clay. You can still see the signs of his investigations in Portisham about seven miles from Weymouth. Unfortunately, he lost his money, as most people have done who have tried to do the same thing in England.

Admiral Boyle raised two very important questions, and although the Lecturer has answered them I might also refer to them. I should like to back up the Lecturer's statement that the problem of producing sufficient oil in this country to meet all the requirements of, say, even a war is an extraordinarily difficult one, and cannot be solved by plain question and answer. Broadly, it is not a technical question; the oil can be produced, but the economic difficulty is almost insuperable.

As to the use of any oil which is afloat at sea, I can say, generally speaking, that the Navy might use at least 90 per cent. of it.

I think His Majesty's Navy can say that they were the pioneers of oil fuel firing, that is, the use of furnace oil. In spite of the fact that oil is not produced

in this country, we were the first Navy to adopt it and develop it, even before the Mercantile Marine. We were very cautious. Our original flash point was as high as 270°F. We have now come down to 175°F., and we were pressed during the war, and are being pressed now, to use oil of a lower flash point—that is, down to 150°F. The Mercantile Marine have consented to use oil down to 150°F, but this lower limit is only possible by reason of certain design features which could not be accepted in naval construction. But we frequently take oils of less than 175°F, so long as we can mix them with other oils of a higher flash point, and the resulting mixture is of the order of 175°F.

Another point which the Lecturer has not had time to mention, and which is very important to the Navy, is the amount of sulphur that is in these oils. We allow sulphur up to 3 per cent. I think myself this is a very high figure. We have a great deal of trouble with oil if the sulphur is above 2 per cent. It is not a question so much of the firemen down below as of the guns' crews on deck, and the observers aloft. If we are emitting large quantities of sulphur vapour from

the funnels it is like a small dose of poison gas.

There is a great deal of loose talk about fuel, and great pressure is always being brought to bear on us to use coal, which is a home product, instead of oil. I would like to say how impossible it is to consider any such suggestion of coal for the Navy. We would handicap ourselves exactly to the same extent as if we did away with cordite and went back to black powder. That is not an exaggeration. The disadvantages of coal from a military point of view are insuperable. It would more than halve our endurance; it would more than halve our power; and it would increase by double the number of men required on board to steam the ship. To give an example, the engine room complement of H.M.S. "Tiger," a ship which still uses coal, is 608; in the "Hood," a vastly superior ship, the complement is 305. Again, when you have come to the end of your coal, it requires the whole ship's company practically a whole day of twenty-four hours to re-coal the ship; about a dozen men can re-fuel the "Hood" in a few hours. All this shows how very little those people who make statements about going back to coal have looked into the subject.

A great many people extol the oil engine because it has such a low consumption. The fuel consumption of an installation including all ship services, as well as propulsion, is about 30 per cent. less than that of a properly designed steam plant; but the power of the former, in a proved form, does not approach the 80,000 S.H.P.

required for light cruisers.

There is an interesting warship under construction now, which it is understood will be using oil engines only, and it is going to have a very large fuel endurance and fairly high speed. But the question of whether you can adopt these engines or not rests, at present, on their reliability and durability, and no one will dispute that for highly rated machinery the advantages at present remain solidly with the steam plant.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

# THE DEFENCE OF PORTS

By LIEUTENANT-COMMANDER J. D. PRENTICE, R.N.

It was Napoleon who said that war is a business of positions, and this is as true in our mechanical age as it was in the more leisurely days at the beginning of last century. Indeed, so far as war at sea is concerned, the axiom has been emphasized by the introduction of steam. With the advent of self-propelled ships, man was enabled to move himself and his chattels more speedily and more certainly by water from one place on land to another: but it is the ports of arrival and departure rather than the waste of waters which connects them which have remained of prime importance. Again we notice that, whereas a hundred years ago a fleet might remain independent of the land for months at a time, to-day its endurance is far more restricted, and may be limited to that of its attached destroyers. For this reason also, ports and bases of supply are more important than ever.

At first sight, therefore, it would appear that a fleet has only to remain in a position to safeguard its land objectives from an enemy and it will have accomplished its purpose. Unfortunately this would entail depriving the ships of the greatest asset which the waters give to man—mobility: in other words, it would involve surrendering that offensive without which no war can be won.

The alternative would seem to be that these ports and bases should be self-contained, and capable of defending themselves during the absence of the fleet. But here we have a paradox: for in these days of economy every penny spent upon the defensive measures of a port means a penny less for the fleet which may have to operate from it. Similarly, every penny spent upon the Navy means a penny less for the other two fighting Services: yet those Services are dependent on the lines of sea communication which it is the Navy's principal duty to keep open. The Navy has primarily to control the sea in order that the Army and Air Force may fight on or over the land, but without the other Services the Navy might not be able to exert decisive pressure upon an enemy.

In the past the surest defence for our ports has always been the possession of a fleet which could prevent the enemy from crossing the sea to attack them. To-day conditions are somewhat altered. The

fleet is steadily shrinking in size, and however careful we may be to maintain "parity," or even some better ratio, with regard to the navies of other nations, the fact remains that the days when we could count upon a preponderance of ships in every part of the world seem to have passed for ever. In addition, the conquest of the air has supplied our potential enemies with a weapon which our fleet can do little to parry. In the past, the mere threat of a "fleet in being" was sufficient to deter even Napoleon from risking his army upon the sea for however short a time. To-day one of our ports might be attacked without a single enemy surface craft leaving harbour. Hence the problem of protecting our ports, scattered as they are all over the world, has assumed a threefold aspect: a direct attack may be made by a surface fleet more powerful than our local naval forces; an attack by land forces convoyed by the enemy fleet; or attack from the air.

Now it is obvious that the liability of any particular port to any or all of these forms of attack will depend entirely upon its position: but in very few cases indeed can one of our ports be attacked unless the enemy first crosses the sea. In the case of home ports it is fairly safe to say that if the enemy is ever in a position to convey land forces across the sea to attack them, he has, to all intents and purposes, won the war. The same may also be said should he be capable of bombarding them from the sea with impunity. There remains the question of protection against air attack. The defence of home ports against seaborne attack is part and parcel of the general scheme of naval defence: similarly their protection from air attack must be incorporated in the air defence organization of these islands as a whole.

On the other hand, should we be fighting a Pacific power, it is highly probable that ports such as Hong Kong and Singapore would be subjected to all three forms of attack before our main fleet could arrive in those waters. These are isolated outposts which must be prepared to defend themselves until the arrival of relief forces, just as Gibraltar had to do so often during the wars of the XVIIIth century.

Between these two extreme examples, the Empire possesses ports of every kind, whose defensive needs vary according to their geographical situation and the nature of the enemy.

As has already been said, direct attack from the land is, as a general rule, impossible, although exceptions to this rule might occur, such as in the case of the "unthinkable" war with the United States of America, or in a second Indian Mutiny. The ideal state of affairs would undoubtedly only be reached if every one of our ports was turned into a self-supporting fortress, but the total funds available for the defence of the whole Empire would be insufficient to do this. Moreover, to expend our

resources in such manner would be to revert to a policy which proved disastrous even before Alfred the Great came to the throne.

The British Empire covers one quarter of the surface of the globe, and our armed forces are diminutive compared with our commitments. Therefore our only hope of providing efficient protection rests upon giving to our arms a mobility greater than that possessed by any other nation. In the past we achieved this by our control of the sea. In the days of sail, ships could carry stores for some six months, and could therefore move from one part of the world to another with comparatively little supply organization: their essential commodities, food and water, could be obtained wherever men existed. In the days of coal we could to a large extent control the movements of the shipping of the world by our hold upon supplies of this fuel and upon the coaling stations. In these days of oil we do not possess a similar advantage. The fleet alone would require an enormous percentage of the oilers under the British flag to keep it supplied for war conditions, if it were working, say, in the Pacific. The percentage of merchant ships which burn oil is rising rapidly, and it is upon them that we must depend for the mobility of our land forces.

The mechanization of the Army is continually increasing the difficulties, and therefore reducing the speed, of its transport overseas. In fact, the introduction of oil as the source of motive power for the two older Services has definitely reduced their strategic mobility.

So far, therefore, the outlook for the distant ports of the Empire would appear to be black in the extreme: yet it is possible that oil, the cause of our troubles, may also enable us to overcome them. It has been shown that without adequate naval protection armed forces cannot be safely transported by sea. The chances of evading an enemy are considerable, but they are not sufficient to warrant the risk involved, particularly in these days when aircraft from a single carrier can in four hours cover, twice over, the area which it would take ten hours for four cruiser squadrons to reconnoitre once. But the development of the oil-driven<sup>2</sup> engine has opened up a new means of transport. Aircraft, with their capacity for movement in three dimensions and at high speed, have greater powers of evasion than surface ships. Air highways to every part of the Empire are being developed. A flying boat has recently taken the air with over one hundred and fifty people aboard. In fact, air transport has shown steadily increasing efficiency ever since

<sup>&</sup>lt;sup>1</sup> The only ships at present fitted with derricks and holds capable of dealing with tanks, dragons, etc., are slow cargo steamers, incapable of carrying personnel.

<sup>2</sup> The word oil is used in its broad sense to include all the various products of oil-bearing commodities, including petrol.

the War, and the rate of improvement is being maintained. In a short time it should be possible to reach any of the Empire's ports by air, and by this means a very high state of mobility could be conferred upon at least a small part of the personnel of our land forces. In addition, at least part of the armed force which the Air Force itself could send to the assistance of any threatened port should have the same mobility.

It is not suggested that part of the Army, complete with mechanical units, could be transported by air—this is obviously likely to remain impracticable for many years to come—but the greatest part of the cost of any big defence scheme for a port, taken over a period of years, must lie in the maintenance of a large garrison. Material costs little once it is installed: men have to be fed and clothed and paid continuously. Furthermore, every branch of each of the Services is becoming more and more specialized, and it is obviously wasteful to utilize, for purely defensive duty, men who are trained for a very different form of warfare.

The material necessary for the defence of any port must be placed there permanently, in order that it may be on the spot before an outbreak of hostilities. Mobility can only be given to the material required overseas in modern warfare by the use of surface craft. But we cannot afford to keep complete units of highly trained personnel at every port we possess. Therefore, we must rely upon one such unit, and that unit must have the maximum mobility which modern science can give it, in order that it may be rushed to the threatened port at a moment's notice.

The material required for the defence of a harbour under modern conditions is composed of a very varied assortment of items. The most essential of these, perhaps, may still be said to be guns. Guns to ward off attack from the landward side: guns to counter any attack by surface craft from the sea: anti-aircraft guns to meet an attack coming through the air. Now, at the end of the last War there must have been many hundreds of guns for which no further use could be found. How many of these were scrapped, how many are at present decorating village greens and municipal squares, and how many remain serviceable, the writer does not know, but he ventures to suggest that a visit to any naval dockvard would disclose a considerable number beyond those allocated to armed merchant cruisers. If, amongst the various Service establishments, there is still a surplus of guns, then they should be distributed amongst our more distant ports, together with the necessary mountings. The work of placing them into position could be undertaken slowly and with great deliberation, and spread over those

many years of peace which the Government has promised us. At the same time, stores of material for laying anti-submarine nets and minefields and for setting up searchlights, wire entanglements, and all the remainder of the paraphernalia of defence should be collected, while the construction and improvement of aerodromes in the vicinity of every port should be encouraged to the greatest possible extent. It is probable that little enough could actually be done in these days of economy, but if the policy were steadily continued over a long period of years, some result at least would be obtained, and every port of importance would have some material for defence at its disposal on the outbreak of war.

At the present time, if any particular point in our chain of communication were threatened, each of the three Services would be called upon to supply a force to deal with its own part of the defence of the port in question. But our Services are small compared with their commitments, and the only hope of success, as we have seen, lies in the use of mobility to assist an offensive policy. To this end every effort must be made in their training, and the question of purely static defence is one which occupies but little time and thought. The defence of ports should, therefore, be treated as a definitely specialized duty, for which certain personnel, drawn from all three Services, should be trained. This training should include, for the Navy, the laying and maintenance of both contact and observation minefields for use against surface craft and against submarines: the use of every sort of antisubmarine device: the organization and management of convoys: a knowledge of the methods of loading and unloading merchant ships, and of keeping the port, its landing wharves, and sheds, clear of merchandise.

For the Army, special training is required in indirect fire from the shore guns at moving targets on the sea. The control of the civilian population in case of attack, including an organization for the institution of anti-gas measures, and a thorough knowledge of the numerous civil services for supplying water, light, transport, etc., upon which the life of a civilized community depends, needs careful forethought.

The first and most important requirement for the Air Force, in this connection, is that the units detailed for the port defence organization should be trained to work over the sea as well as over the land. Accuracy in navigation is essential for any reconnaissance craft, and even fighters must be prepared to find and attack enemy ships before they come in sight of land. In addition, special training should include observation

<sup>&</sup>lt;sup>1</sup> Any modern naval bombardment is almost certain to be carried out from behind a smoke screen.

for shore batteries firing at ships under weigh: long-distance reconnaissance over the sea and the recognition of various types of ships from the air: the bombing of moving targets upon the sea: the location and attack of submarines: and, in addition, all the usual duties which are required of Army co-operation machines over the land.

It is quite realized that all these problems do receive attention from time to time, and that training in some of the best-known solutions of them is given: but, so far, there seems to have been little co-ordination between the Services in an effort to create a complete organization.

The defence of ports, being a purely defensive problem, is wont to receive the spasmodic attention of one or other of the Services, instead of being regarded as a task which requires not only the co-operation of all three of them but also the close association of the Mercantile Marine and the civil authorities.

It is suggested, therefore, that the unit for the defence of ports should be created by drawing the personnel from all three Services: and that the unit itself should investigate the whole problem and work out details. Finally, if the efficiency of air transport continues to improve at the present rate, it should be possible, before many years have passed, for the personnel of the unit to be conveyed to its destination in war by air, considerably more quickly and safely than by sea. With the assurance that a reinforcement of this nature could reach any port within a few days local garrisons could, in many cases, be reduced.

applicate, the power is light 1400 with his religible out the fine car interest

# THE WORK OF THE ROYAL AIR FORCE AT ADEN

By Squadron Leader The Hon. R. A. Cochrane, A.F.C., R.A.F., p.s.a.

On Wednesday, 12th November, 1930, at 3 p.m.

FIELD-MARSHAL SIR CLAUD W. JACOB, G.C.B., G.C.S.I., K.C.M.G., in the Chair.

THE CHAIRMAN introduced the Lecturer.

#### LECTURE.

THE importance of the Port of Aden as a link in our Imperial Communications to the East needs no emphasis, so that the transfer of the responsibility for its defence from the War Office to the Air Ministry, in April, 1928, constitutes an event of some interest.

Our present object will, therefore, be to analyse the reason which led to this transfer of control, and to describe briefly the work which has since been carried out at that place.

Although the defence of a harbour entails responsibility for its protection against attack by land, sea or air, I propose to deal only with its landward defence. Further, to understand the nature of the problems which awaited solution at Aden in 1928, it is necessary to survey very briefly its past history.

THE PROTECTORATE UP TO THE GREAT WAR.

On 19th January, 1839, Captain Haines, R.N., after a brief struggle, planted the Union Jack on a promontory of the barren rocks of Aden, and thus assured for the British Empire the only large harbour along the whole 1,100 miles of the South Coast of Arabia.

From the outset, the defence of the port was a difficult problem, for although it is only connected with the mainland by a narrow strip of sand, which affords exceptional facilities for defence, the local tribes attacked with such vigour that it was necessary to maintain a garrison of 1,200 European and 1,300 Indian troops. But after seven years of fruitless effort the tribesmen appear to have realized that the defences were too strong for them, and to have been ready to come to terms. Treaties were therefore concluded with the principal tribes living within

a distance of some 70 miles of Aden, with the object of forming a buffer territory which would help in warding off any attack from further North.

The form of these Treaties is important. Originally they were merely Treaties of mutual friendship; but later they took the form of definite Protectorate Treaties, in accordance with which the British Government undertook to extend its protection to the territory of the tribe; and in return the tribal chief agreed to refrain from committing any hostile act or from entering into correspondence or Treaty relations with any foreign power; while the whole was cemented by a handsome annual stipend, granted by the British Government. In certain of the Treaties, the chief also agreed to protect trade routes passing through his territory. It should be noted that no attempt of any kind was made to interfere with the administration of the territory, which was left entirely in the hands of the tribal chiefs; and this has been a cardinal factor in our policy ever since.

Difficulties with Turkey.—In 1873 a new situation arose. Certain Turkish forces which were at this time engaged in consolidating their position in Southern Arabia advanced straight through our "protected" tribes and reached Lahej, only 20 miles from Aden. The Aden garrison was too small to force the Turks to retire, but fortunately we were in a position to bring diplomatic pressure to bear at Constantinople; and this resulted in orders being sent to the Governor of the Yemen that he was not to interfere with our tribes. Nevertheless, in spite of this agreement, Turkish forces remained in occupation of the high plateau round Dala, which was in the Protectorate, but no attempt at a further encroachment was made until 1900, when a Turkish force again came South. This resulted in a second brush with the garrison of Aden, and the Turkish Government, which had previously refused the suggestion, now asked for the appointment of a commission to survey and mark out a boundary.

After much bickering and obstruction, which necessitated the despatch of a military expedition to support the British Commission, a frontier was agreed upon in 1904. For the next three years we maintained a force of some 2,200 men near the town of Dala, seventy miles North of Aden, to ensure that the frontier was respected. This period also produced a crop of new Protectorate Treaties, some with tribes so far from Aden that it is obvious that far from facilitating the defence of the Port, which was the object of the original Treaties, our new promises of protection were themselves a considerable commitment.

In 1907 our forces were withdrawn from the interior. The main reason was economy, but there was also a desire to limit our commitments, since, not only was the force at Dala an expense on top of that of the normal garrison of Aden, but there was also the possibility that it might become involved in a frontier quarrel with Turkish forces across the border, with serious consequences. The necessity for securing the lines of communication had already led to two expeditions against our own tribes, and there was a danger that we might eventually be drawn into some form of direct administration of the tribes, and this it was our settled policy to avoid.

# ADEN DURING THE GREAT WAR.

After the evacuation the Turks respected the boundary until 1915, when on the outbreak of war with Britain they advanced across the frontier and took up a position outside Aden, where they remained until the Armistice. Although our garrison was increased to six infantry battalions and one squadron of cavalry, it was unable to do more than hold a defensive line across the narrow isthmus connecting the harbour and the mainland. Of the "protected" tribes some remained loyal, while others threw in their lot with the Turks.

## CHANGE IN DEFENCE POLICY

Difficulties after the Armistice.—After the war, the Turkish forces were repatriated, and we renewed our promises of protection to the tribes, and prepared to settle down to the conditions that held good prior to the war. But we reckoned without a new force in Southern Arabian politics, the Imam Yahia of Sana'a, head of the religious sect of the Zeidis and personal ruler of the Yemen, a mountainous country about the size of England, containing a population of some 2,000,000. The Imam now came forward with claims to the whole of South Western Arabia down to Aden. These claims he based on the fact that the Turks, while in temporary military occupation of his country, had illegally bargained away part of his ancestral lands, and he therefore refused to recognize the Anglo-Turkish boundary of 1904. To give point to his contention, in 1919 he advanced into the Protectorate and seized the town of Dala and the fertile zone surrounding it.

The tribes once more called for the protection which it was our duty to provide, and once more it was found impossible to send a military expedition from Aden. But conditions had changed and, unlike the situation in 1873, there was now no Constantinople at which diplomatic pressure could be applied. We were consequently faced with the unwelcome fact that we had promised protection which we were quite unable to afford. The result was that during the next eight years the Imam, in spite of numerous protests, gradually extended his hold on the Protectorate, until by the end of 1927 his forces had reached a point

only forty miles from Aden, and the remaining tribes in the Protectorate were becoming restive at our inaction.

The Re-organization of the Garrison.—At this time the garrison of Aden, apart from the coast defence units, consisted of one British and one Indian infantry battalion; the Aden troop of cavalry and one flight Royal Air Force. The influence of this force did not extend beyond railhead, which was some twenty-five miles inland; while its employment in an offensive against the Imam's forces was out of the question on account of the difficulties of the country.

The size of the garrison had been exercising the Home Government for some time, because it appeared to be unnecessarily strong for the local defence of Aden, while the cost of reinforcing it on a sufficient scale to restore the Protectorate frontiers was prohibitive. Yet it was obvious that something must be done to retrieve our prestige in Southern Arabia.

It was consequently decided to effect a complete re-organization of the combatant forces in the Protectorate at an estimated saving in cost of £100,000 a year. The new garrison was to consist of one squadron, Royal Air Force, a section of armoured cars, and a small body of native levies; while the fixed armament previously installed for the seaward defences was to remain, but on a reduced scale. The Indian battalion was withdrawn at the beginning of 1928, and the Aden troop was disbanded, but the British battalion remained until early in 1929 in order to afford time for the native levies to be raised and trained.

The Problem of Defence.—The problem which had to be faced when the Air Ministry took over from the Army in April, 1928, was far from straightforward. Early in 1928 the Imam's forces had captured two Sheikhs who were under our protection. This act of aggression resulted in the H.Q. and garrisons of the local Zeidi commander being bombed. That led to the release of the Sheikhs. Negotiations with the Imam were then opened in the hope of arriving at some agreement regarding the frontier, but it soon became evident that it would be necessary to use force to regain the territory which he had occupied.

The military forces at the Imam's disposal were by no means negligible. His regular army consisted of about 6,000 infantry and some 30 effective pieces of artillery, but not more than half his available forces were concentrated on the Southern frontier or were likely to be available for an attack on the Protectorate. Their training was in the hands of Turkish ex-officers and N.C.O's, and according to native standards they were well organized and equipped, and excellent fighters.

In addition to his regulars the Imam maintained a number of irregulars with a normal peace strength of about 10,000, but during

May and June an intensive recruiting campaign had been organized in South Western Yemen, whilst arms and ammunition had been distributed among the tribes. The commanders of the frontier garrisons were openly proclaiming their intention of advancing on the Lahej Delta, just North of Aden, should we start bombing, and the prospect of loot was proving a considerable recruiting attraction.

Communications in the Yemen were not good, but the principal towns were connected to Sana'a, the Imam's capital, by telegraph or W/T, and the Imam also possessed four aircraft of various types. The latter did not, however, take any part in the operations.

On our side we had a squadron of twelve aircraft available for offensive action. On the face of it, the disparity of strength was considerable, and the leading citizens of Lahej, fearing a repetition of the Turkish advance of 1915, retired behind the defences of Aden, carrying with them such articles of value as they could move. Our aim in the ensuing operations was to force the Imam to withdraw from Dala and the country South of it, as far back as the old Anglo-Turkish boundary.

# THE OPERATIONS AGAINST THE IMAM, 1928.

There appeared to be two methods of tackling the problem. We could either attack the Zeidi garrisons in the occupied area until they were compelled to withdraw; or we could disorganize normal life in the Yemen, and thus force the Imam to relinquish his claims in order to obtain relief. The former method had several disadvantages; it was probable that the Zeidi soldiers, who occupied very strong stone forts well provided with dug-outs, would be difficult to dislodge, while even if they were forced to leave, there would be no guarantee that the Imam would not send down fresh forces and the struggle might begin again. It appeared, therefore, that the power of aircraft to reach any part of the Yemen would have to be demonstrated, so that the Imam himself would realize that he had no counter to the new weapon, and that his eight years of military supremacy were over.

On 20th June messages were dropped on the principal towns in the Yemen warning the inhabitants that action would follow if Dala was not evacuated by 24th June. The Imam did nothing beyond order the construction of dug-outs.

Before action could be taken in the Yemen it was necessary to dispose of the bogey of invasion, which had so disturbed the citizens of Lahej. For the first week of operations the effort was therefore directed to bombing the headquarters of the frontier districts at Taiz, Mafalis and Kataba, and all villages on the frontier known to contain soldiers. At the former places, aircraft were met by anti-aircraft fire from a

number of pom-poms, but the shooting was very inaccurate, and did not affect the bombing. The result of this bombing was immediate; the threatened advance failed to materialize, and by the end of the week intelligence reports spoke of great activity in the construction of dugouts. On our side, panic ceased and the Koteibi tribe, South of Dala, attacked and captured a small outpost which had been held by the Zeidis for eight years. The post was only lightly held, but the attack was an indication of the improved morale of the tribes.

Attack on the Yemen Garrisons.—It was now possible, during the second week, to proceed with the original plan, and to bomb the military garrisons of the principal towns in the Yemen. This entailed flying over 150 miles of desert and mountains during extremely bad monsoon weather, but by the end of the week pilots reported that the main towns appeared deserted. These towns are one of the surprising features of the Yemen; most of the houses are built of stone, many of them being six or seven storeys high. The barracks and the house of the military governor, which were generally the objectives chosen, were particularly conspicuous. For political reasons the Imam's arsenal at Sana'a was not attacked. It was soon obvious that serious dislocation had been caused, but in view of the unfavourable weather conditions, action during the third week was concentrated on the Zeidi garrisons in the encroached area South of Dala.

The Capture of Dala.—In this area the local Zeidi commander at Kataba had sent a force of 600 irregulars to retake the outpost recently captured by the Koteibis, but his force had been repulsed with a loss of 15 killed and 4 prisoners. This success had emboldened the tribesmen, and it appeared that, given sufficient air support, they might now be induced to attack the Zeidis in Dala itself. Moreover, information had been received that, in spite of the commander's repeated requests, the Imam had refused to send reinforcements to Kataba. This seemed a most significant result of the week's bombing in the Yemen, since it appeared that the Imam's determination to hold on to the Protectorate might already be weakening.

The Amir of Dala, who had been an exile for eight years, was therefore sent up to organize the advance; while a British officer, with a portable W/T set, accompanied him.

As a result of a close co-operation between the tribal advance and the aircraft bombing the garrisons, made possible by the use of W/T and ground signals, the tribesmen did not encounter serious opposition, and in two days captured Dala and its immensely strong stone fort, built by the Zeidis in 1920. The Zeidi garrison, which was thoroughly demoralized by constant crouching in dug-outs, escaped

during the night by means of a tunnel connecting the water supply, and retired across the frontier ten miles away. The immediate objective had therefore been attained as the result of three weeks' operations, and bombing was discontinued to allow the Imam to come to terms should he wish to. A landing ground was soon constructed at Dala, and the frequent presence of aircraft and visits by political officers had a great effect in strengthening the authority of the Amir, and in helping him to organize defensive measures along the frontier.

It is interesting to note that, although many of the neighbouringvillages had been bombed, the inhabitants were perfectly friendly to Air Force officers who visited them.

The Last Phase.—Towards the end of July it appeared that the Zeidi officer commanding at Kataba was sending reinforcements to Awabil, which was another Zeidi stronghold in the Protectorate, and a few days later the garrison, which numbered about 400, raided some neighbouring villages. As this was a definite act of agression it was decided to clear the Zeidis out of this portion of the Protectorate.

Awabil Fort, which was built by the Zeidis in 1927, was therefore bombed. It was soon evacuated by the garrison, who took up their position by day under some overhanging cliffs on an adjacent hill; but, although they could not be reached by bombs, they were not safe from machine gun fire from the air. After holding out for fourteen days, they decided to retire across the frontier before they were cut off by our tribesmen, who were now closing in on them.

The only remaining incident of importance was an attempt by the Zeidi commander at Kataba to recapture Dala. He crossed the frontier early one morning with a force of 500 men accompanied by a pack gun. The first warning of the raid was the sight from the fort at Dala of villages in flames. A report by W/T was at once sent to Aden.

Although the distance was seventy miles, the first aircraft arrived in one and a half hours, and was lucky enough to locate the gun's crew in the open, and to cause ten casualties. The arrival of the aircraft was the signal for the raiding force to scatter, and soon to withdraw. By evening it was back in Kataba, where it was heavily bombed. This was the last raid attempted, and shortly afterwards the Imam issued orders to his commanders in the frontier districts that they were not to cross the frontier. With the issue of these orders the operations ceased.

An interesting side-light on the effect of the bombing in the Yemen was supplied by the American Vice-Consul in Aden, who visited Sana'a while the operations were in progress. It appeared that the moral effect of the bombing was very great indeed; trade was virtually at a

standstill, while even in Sana'a, a town which had never been bombed, two-thirds of the population had evacuated their houses. The general feeling was that it was useless to fight against aircraft, and that the Imam would have to yield.

Although the Imam has not yet signed a Treaty recognizing the Anglo-Turkish boundary, his orders to the Zeidis not to cross the frontier are still being strictly obeyed.

Cost of Operations.—The cost of the operations which achieved this result was small. Casualties attributable to the operations were: one officer killed, and one aircraft destroyed through hitting the ground during a sandstorm. The amount of flying during the three months, June, July and August, although it took place under the most difficult conditions of the monsoon period, was not more than is usual for a squadron during its normal peace training; so the sole additional expense of the operations was the cost of bombs and ammunition, which amounted to £8,567.

Causes of Success.—It may be of interest to examine how much the success of the operations was due to local conditions, or even luck, and how much to the weapons and methods used.

The local conditions, superficially at any rate, were not favourable to aircraft operations. The weather conditions were bad; while the Zeidi garrisons in the encroached area were quartered in the midst of our own tribesmen, and bombing might, therefore, antagonize these to the extent of throwing in their lot with the Zeidis. Again, there was ample cover from bombing, or where this did not exist, dug-outs had been constructed on a large scale.

All these factors might be expected to operate against the successful use of aircraft. But there was one factor in favour of aircraft which was of decisive importance, that was our power to hit the Imam while he was unable to hit back. No one can enjoy a war in which the other side does all the hitting, and least of all tribesmen who expect some compensation for their exertions. But in these operations they got nothing, for even the ammunition they fired was a total loss. It is true that by evacuating towns and villages and by constructing dug-outs the Imam could prevent casualties, but these very precautions only increased the dislocation of normal life and trade. As he had no means of stopping aircraft from coming over, he had no option but to give in.

OPERATIONS AGAINST SUBEHI TRIBES, FEBRUARY, 1929.

The operations against the Imam just described established the defence of the frontier on a satisfactory military basis, but there still remained the question of the control of the tribes within the Protectorate.

In January, 1929, trouble developed with the Subehis, a tribe numbering some 20,000, who live in the foothills fifty miles North-West of Aden. In 1903 they were described by the G.O.C., Aden, as follows:—"The Subehis are a large and predatory tribe. They have always been the most difficult to manage of any in the vicinity of Aden. They have no Sultan or head of the whole, and the sections are independent. In this and their persistently predatory habits they resemble the Pathans of the Punjab frontier."

The military forces available in Aden had never been sufficient to punish the tribe for raiding, so a system of payments had grown up during the last fifty years, and ninety-six minor Sheikhs were now in receipt of a regular scale of presents and entertainment as an incentive to good behaviour. These were in addition to the stipends fixed by Treaty, which were paid to the six recognized leaders of the tribe. As the tribe was already pledged to safeguard the trade routes, it was decided that the time had come to give up this somewhat undignified means of preserving the peace. The ninety-six Sheikhs were consequently told that their presents would be discontinued.

Their answer, which was fully expected, was a raid into the Lahej area, during the course of which some livestock was stolen and a girl murdered. A few days later they trailed their coats even closer, and abstracted two Government camels from a police post outside Aden. On being told to make full reparation they informed the Resident that they intended to defy his orders until their presents were restored. It was therefore necessary to take action.

After the usual warnings had been given, targets in the area occupied by the offending sections, which measured about twenty miles by ten miles, were bombed. Thereupon the whole area was evacuated by the tribe, who drove off their flocks into the neighbouring mountains. From there they could watch their villages, which contained a great deal of inflammable material, being gradually burnt.

Bombing started on 30th January, and was continued intermittently until 5th March, by which date the tribesmen had had enough and sent in a deputation. "Tell us what to do," they said, "to stop this calamity which has befallen us." By 27th March all the chiefs had come in, the two camels had been returned, full compensation paid for the murdered girl, and the Resident's demands agreed to in full.

There can be little doubt, I think, that in defying the Resident the tribe had failed to appreciate the new power which he had at his command, or to realize that their barriers of desert and mountain had melted

<sup>&</sup>lt;sup>1</sup> Major-General P. J. Maitland, C.B.; report dated 22nd June, 1904.

away, and that they could now be hit without any hope of retaliation. The success was so complete and so cheaply gained that it may be well to remember that for fifty years the Subehi tribes had been a continual thorn in the flesh, and had always escaped punishment owing to the practical difficulties of sending an expedition into their country.

The Subehi trouble concluded the active operations which were necessary in order to secure the frontier, and to ensure that the tribesmen respected their Treaty pledges.

# THE PEACE ROUTINE OF THE R.A.F.

Since the Spring of 1929 the Royal Air Force has been carrying out its normal routine of peace control.

There was at one time an impression that an Air Force garrison in peace would fail because there could be no direct contact between the occupying forces and the inhabitants; aircraft would only be used in fact to bludgeon wrongdoers into a grudging submission. But in actual practice nothing is farther from the truth, for the essence of air control is an accurate and detailed knowledge of the people, and this necessitates constant intercourse between political and intelligence officers, and the inhabitants. In a large and undeveloped country, such as the Aden Protectorate, frequent visits would be impracticable without the use of aircraft as a means of conveyance.

Owing to the disturbed conditions during the previous fifteen years, very little was known about any of the tribes except those in the immediate vicinity of Aden, and the only contact between the other tribal leaders and the Resident was afforded by their periodical visits to Aden to draw their stipends. One tribe had only been visited by a political officer once in the previous twenty-seven years, while several had not been visited for five years. A policy of opening up the country by establishing landing grounds was therefore adopted.

It was found that our prestige was so high that no difficulty was experienced in sending an officer with a small tribal escort to construct landing grounds at the chief villages of nearly every tribe. It is sometimes thought that landing grounds are expensive items, but the entire cost did not exceed £500, and the annual maintenance is small. Political officers are now able to visit the tribes in as many hours as it would previously have taken weeks, with the result that the relationship between the Resident in Aden and the tribes is closer than it has ever been before. The ability of aircraft to demonstrate over an area has a so had a tranquillizing effect, and has enabled numerous small disputes to be settled before they have developed into serious affairs.

#### CONCLUSION.

We have seen how the necessity for safeguarding the port of Aden from the landward side gradually drew us into association with the tribes of Southern Arabia, until we had built up a Protectorate having a land frontier some 200 miles in length.

Before the War the defence of this frontier rested on our ability to bargain with Turkey, and the presence of our fleet in the Mediterranean was probably quite as powerful a deterrent to Turkish encroachment as was the garrison in Aden. It was under these rather special conditions that Treaties of Protection were concluded with tribes, many of whom were far beyond the reach of any military forces operating from Aden.

After the War the conditions completely changed, and we were faced with the task of defending the land frontier by purely military means. Our difficulties were as apparent to the Imam as to ourselves, and he was not slow in taking advantage of our weakness and in seizing such of the Protectorate as he wanted.

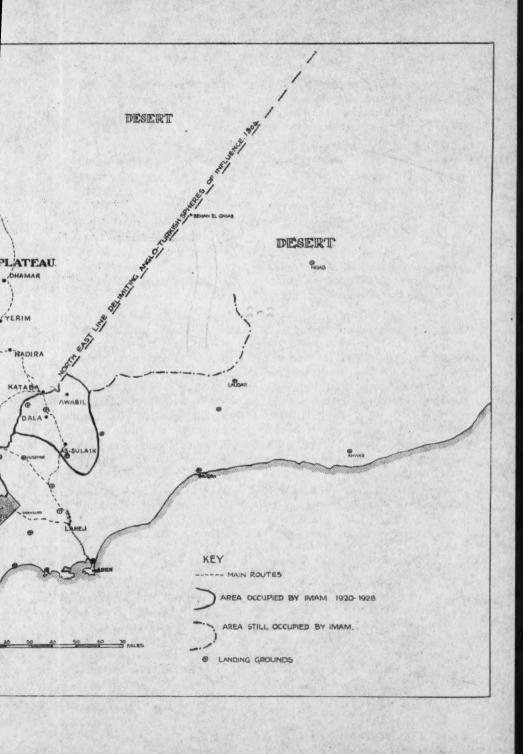
At first sight it appeared that we should inevitably be led into a military expedition, although it would have been on a much larger scale and far more costly than that of 1904. But, given that an expedition could restore the frontier, what next? In 1907 it had been necessary to withdraw to the coast on account of the cost of occupation and the fear of being drawn into a direct administration of the country; but this withdrawal did not reduce our power to bargain at Constantinople. If in 1928 we had merely restored the frontiers and then withdrawn, there would have been no guarantee that the Imam would not encroach once more, since the direct application of force was now our only bargaining power. As it happened, cost prevented the despatch of a military expedition.

There were those who at the time doubted the ability of one squadron of aircraft to deal effectively with such large forces as the Imam could muster, but as we have seen, the fact that aircraft could hit and go on hitting, while the Imam was unable to hit back, made it impossible for him to resist. The Subeni tribes learnt the same lesson a few months later, and since the Spring of 1929 the Protectorate has been quiet.

It is difficult, perhaps, to find a parallel to this peace time control exercised by the Royal Air Force, but I would suggest that the Royal Air Force has only been continuing in the interior the same civilizing work which the Navy has carried out with such success along the coasts of the Red Sea and Persian Gulf. In the same way that a sloop has always been an influence for law and order, so a flight of aircraft is visible proof to a whole tribe that the Government cannot be trifled

n d n or ol al ag ats as is ed







with. I do not believe that it will be necessary to resort to force in the future any more frequently than it has been necessary in the past to carry out naval bombardment.

#### DISCUSSION.

#### ADEN AND HAWAII.

Major-General L. H. R. Pope-Hennessy: There is little doubt that the Air Force has dealt admirably with certain tribal disorders at the back of Aden, but there are other aspects of the problem; for instance, tribal disorders combined with an attack by a major Power in the event of an important war; tribal disorders on the boundary, combined with internal unrest inside the Aden area, possibly combined also with an intensive landing attack by a major Power. The garrison at Aden, consisting of a squadron of the Royal Air Force, showed great efficiency in the operations described by the Lecturer, but it has yet to show its efficiency in the case of a cruiser attack and a landing.

I finished off my time as Military Attaché at Washington last month by a tour which comprised a visit to Hawaii. Hawaii is for the United States a very important point in her eastern line of communication with the Phillipines, but it is not nearly as important as Aden is to the British Empire. Now this is how the United States have set about the defence of Hawaii. In Pearl Harbour there are twenty submarines; the actual fortifications covering that harbour and Honolulu are of the most modern description, including guns from 16-inch down to mobile 6-inch. In addition they have approximately six to eight times the air force strength which we have at Aden. One would think that the Americans would consider that to defend an island in the middle of the Pacific, 3,000 miles from anywhere, these defences would be sufficient. Not a bit of it. They have added a complete division of infantry—a motorized division. Its base is in the middle of the island, but it is so organized that it can reach any threatened beach at once and dominate that beach by the fire of its sixty-four guns. That is the way in which the United States provides for the defence of an important link in her chain of communications—a link which, as I have remarked, is much less important than Aden is for us.

At Aden we seem to have put all our eggs into one particular basket. Yet there has been no incident in history to show that a cruiser attack in support of a landing can be beaten off by aircraft. Their capabilities in this respect are unknown and hypothetical.

## INTERNAL COMMUNICATIONS.

GROUP-CAPTAIN R. H. VERNEY, R.A.F.: I should like to ask the Lecturer whether it is possible to do anything to improve the communications between the different tribes for whom we are to some extent responsible. Experience in India shows that roads bring the Ford lorry, which is a great civilizing agent; and trading becomes a substitute for raiding. This does not, of course, affect the question of air control.

As regards the remarks made about the defence of Hawaii, I suggest that they rather go to prove how much money the Americans have got to spend.

#### REINFORCEMENTS.

GROUP-CAPTAIN C. L. COURTNEY, R.A.F.: The remarks made by General Pope-Hennessy are obviously of very great importance; but, as the last speaker

hinted, the position of the United States is not quite on all fours with that in this country. To begin with, the United States is a wealthy country, whereas we can hardly make both ends meet. Then, as regards the comparison which General Pope-Hennessy made between Hawaii and Aden, I think it is fair to say that whereas Hawaii is extremely isolated, and would be correspondingly difficult to reinforce in war, Aden is not in that position. One of the principles under which the Royal Air Force have claimed to be able to take their share in Imperial defence is that this country cannot afford to have what might be considered adequate garrisons to meet every contingency in every place which might be subjected to attack in war. The whole basis of the Air Force thesis is that it must be possible rapidly to reinforce such places as Aden if they are threatened. With that object in view a process is now going on of developing strategic air routes linking these various important points. The Lecturer, no doubt, had no time to tell us about the work of the Air Force in developing air routes to connect Aden with Iraq along the southern coast of Arabia, and with Egypt via the Red Sea.

I do not think it has ever been suggested that one squadron of the Royal Air Force would be sufficient to meet every possible contingency at Aden. The decision fixing the strength at one squadron was made in the light of conditions in 1927, which still hold good to-day. Under those conditions one obviously could not afford to lock up in Aden a garrison sufficient to protect that place in case of a major war which, as far as one can see, is very far off. There is also the ordinary pre-war scale of coast defence artillery at Aden. The question of modernizing that defensive equipment is, I believe, at the present moment sub judice, and therefore it would hardly be right for me to offer any remarks as to way in which it should be modernized. There are those who think that the system of artillery defence should be retained as before the war, but with more modern equipment. There are others who think it would be more economical to

carry out some of those functions by means of aircraft.

### THE LECTURER:

In replying, the Lecturer said: With regard to Group-Captain Verney's question; it was found in 1928 that the force which had been stationed at Dala from 1903 to 1907 had constructed a graded track down from the plateau. It was only intended for pack transport and for carts, but the foundations were there, and in 1929 at quite small expense, it was widened, and is now fit for light motor traffic and sixwheeled armoured cars. Bearing out the point which Group-Captain Verney mentioned, as soon as the track was opened the inevitable Ford car made its appearance, and there is now regular traffic between Dala and Aden. As regards other parts of the Protectorate, I am afraid the situation is not quite so hopeful. To the West the country is largely desert, but to the East I think it would be practicable to make a track up to the area round Laudar. Six-wheelers have already been to within a few miles of that point.

General Pope-Hennessy questioned whether the defences of Aden are sufficient to withstand a serious attack on the Protectorate frontiers, combined with a serious rising in Aden, and a serious threat from a major Power by sea. Under those circumstances I have no hesitation in saying that the garrison of Aden to-day is insufficient; but, as Group-Captain Courtney pointed out, those are not the circumstances which were assumed when the size of the garrison in Aden was settled. But, excluding for the moment attack by sea, let us consider an attack over the frontier and a simultaneous rising in Aden. If ever there was an opportunity for that to take place it was in 1928. Conditions then were serious. The Imam had been

top dog for eight years, and was openly proclaiming that he would advance on Lahej as a step towards Aden. We have seen that the action which was then taken

by aircraft was sufficient to neutralize that threat.

Then as regards an internal rising; it is perfectly true that in 1928 there was a British battalion in Aden. I am afraid it would mean discussing a great many factors if I were to sum up all the considerations which led to the withdrawal of that battalion, but I will just mention two. Firstly there are still some four hundred British other ranks and airmen in Aden armed with rifles, and secondly the very wide streets of the native town makes it exceptionally favourable for action by armoured cars.

I suggest, therefore, that, under present conditions, the garrison in Aden is sufficient, and, as Group-Captain Courtney remarked, if the situation changes then the position of Aden on a main trade route, which enables reinforcements to be obtained from Egypt or India at very short notice, becomes an important factor.

Finally, the question of the importance of Aden; General Pope-Hennessy emphasized its vital importance to our routes to the East, and said that in his opinion it was of infinitely greater importance to the British Empire than Hawaii was to the United States; he therefore considered that our garrison at Aden was hopelessly inadequate. I am afraid I do not feel competent to comment on this comparison, but I would like to quote a published opinion of Lord Rawlinson,

written by him on his way to India in 1920.1 He says :-

"We have spent a frightful amount of money in Aden, most of which seems to me to have been wasted. We have built permanent stone barracks in the Crater, and have spent a vast deal in fortifications which have but limited value. So do we chuck away money in superfluities, and have none when we need it for essentials. The land defence of Aden is a simple matter, and the sea defence mainly a naval question. As long as we command the Indian Ocean, Aden is in no danger, and if we do not I cannot see that it is of any use to us. It is a thoroughly bad station for a British battalion, which is bound to deteriorate there. I would evacuate the hinterland . . . I would confine ourselves to the promontory, and reduce the garrison to a battalion of native troops, a company of sappers, and some garrison artillery for the forts."

#### THE CHAIRMAN:

I have been very interested in what the Lecturer has said, and I must say that the results of what he has described have been remarkable; but to my mind we have yet to prove whether we are playing a gigantic game of bluff at

Aden, or whether our means of defence there are really sound.

Having served on a frontier of India most of my life, and having seen human nature on that frontier—which I find is pretty much the same everywhere—it is very curious to go back to this question of Aden. On the North-West frontier of India we employed a system of reprisals; that is to say, when a tribe had committed a certain number of offences and the bill had mounted up too high we started an expedition against them, and we did a certain amount of damage, and we came out leaving, probably, resentment behind. That has been going on for years: I do not know whether to classify the Air Force methods as being on those lines or not. At length we have realized that this is not the way to do business. If you really want to punish a tribe you have got to go for them, and you have

<sup>1 &</sup>quot;Life of Lord Rawlinson," by Sir F. Maurice, p. 284.

got to stay there. I was very interested to hear the Lecturer say that, by means of air communication, they are getting to know the tribes and to visit them; but you want a good deal more than that. You want to open up your communications. We have had a magnificent example of that in Waziristan. For years everybody said: "You cannot do anything there; it is an impossible country." We have changed all that, and we have only done what history has always taught us, namely, that if you want to subdue a country you have to make communications—that is to say, roads, and afterwards railways, a post, and telegraphs. They are the things which really matter. In Waziristan we did that, but we were not such fools as to clear out of the country and leave nobody behind. We have a very strong force there, and from the fact of its being there, plus the great assistance which the Royal Air Force gives the commander, we have got a country which is kept quiet, and things are going very well.

I am a great believer in showing the flag wherever you are, especially with Orientals. Take Aden; by degrees they will begin to learn that there are no British soldiers there, and all sorts of influences will be at work. One day we may wake up to and that Aden has been very seriously attacked by this or that

tribe combined, may be, with a force from outside.

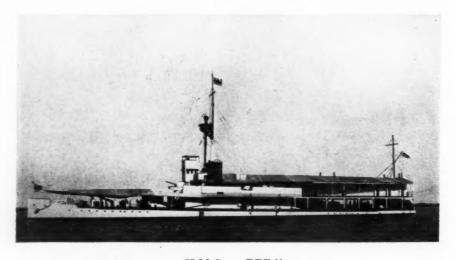
One could hammer the subject to death, but I will not say any more except to remind you that we have yet to prove that the small garrison which we now have at Aden is not bluff, and that one day we may find our bluff is called; then, if it is bluff, the results will be disastrous. So far everything has been going well, and the Air Force is to be congratulated on what it has done there.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

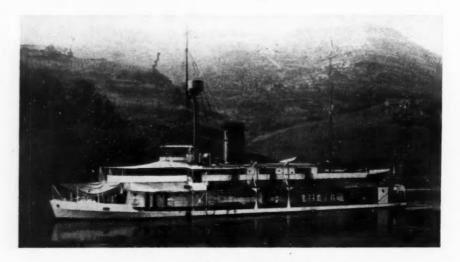


THE WORK OF THE ROYAL AIR FORCE AT ADEN AN AIR ATTACK ON DALA FORT

# H.M. CHINA GUNBOATS



H.M.S. "BEE"
FLAGSHIP OF THE REAR-ADMIRAL AND SENIOR NAVAL OFFICER YANGTSE RIVER



H.M.S. "TERN"

A SMALL RIVER GUNBOAT OFF WANHSIEN

Photographs by courtesy of Dr. Oscar Parkes, O.B.E., M.B., Ch.B.

# THE WORK OF OUR CHINA GUNBOATS

By Vice-Admiral H. J. Tweedie, C.B.

On Wednesday, 3rd December, 1930, at 3 p.m.

ADMIRAL SIR REGINALD TYRWHITT, Bart., G.C.B., D.S.O., D.C.L., in the Chair.

THE CHAIRMAN, in introducing the Lecturer, recalled that Vice-Admiral Tweedie was the Senior Naval Officer on the Yangtse River from 1927 to 1929.

#### LECTURE.

#### THE YANGTSE RIVER.

BEFORE describing the work of the gunboats it may be as well to give a short description of the Yangtse, the river on which they chiefly operate, the countries through which it flows, and especially the peoples with whom the British naval officer in those inland waters of China has to deal.<sup>1</sup>

First, that part of the river on which we work, that is to say where there are British residents, is a stretch of about sixteen hundred miles; there are also two lakes, the Poyang and Tungting, about a hundred miles across. For convenience of reference the River is divided into three parts: the Lower, Middle, and Upper Rivers. Each of these parts has its own special and very different characteristics, both material and political.

The Lower River from the mouth to Hankow is a run of six hundred miles, for the most part through flat plains, growing more hilly as Hankow is approached, and although on the whole the scenery is not striking, in the early Spring and again in the Autumn the colouring, and always the sunsets, are very beautiful. Near the entrance, but actually eleven miles up the Whompoa river, is the city of Shanghai, a place which even in my thirty years' knowledge of it has developed in the most surprising way. Shanghai has its own important problems of defence and administration, but it does not very directly concern the gunboat flotilla, except as a gay city in which each gunboat looks

<sup>&</sup>lt;sup>1</sup> See map facing p. 116.

forward to refitting once a year and where officers and men can foregather with those of the large number of residents who are men and women of their own country.

Leaving Shanghai in the morning the first day is spent threading through what might be the open sea but is actually a maze of channels excellently buoyed and lighted by the River Inspectorate, a department of the Chinese Customs. The officers of this service are mostly British and retired from the Navy or Mercantile Marine. Having anchored on the flats for the first night, gunboats take the opportunity to do target practice and exercise their armaments generally, as it will be the last opportunity for using their guns until the following year, unless it should be necessary to fire in earnest.

Next day we should arrive at the first port of consequence, Chinkiang. once of considerable importance to foreigners but evacuated in 1927 and thoroughly looted. It has now been given up as far as British Consular interests are concerned. It is, however, still an important place of native trade, being situated on the South Bank of the river at the entrance to that wonderful artificial waterway, the Grand Canal. The latter, although in many parts allowed to silt up and fall into disuse, still carries an enormous number of trading junks, and it is reasonable to suppose that, if peace comes once more to China and modern dredgers are brought into use there, the Grand Canal will return to its former glory, with a consequent reaction on Chinkiang. although the British Consulate has been closed and officially it is off the map, this is the sort of place where a British gunboat is appreciated even more than in localities where people feel comparatively secure, because, official recognition or not, the work of the British firms there goes on. For some two years these traders and customs officials lived in barges and houseboats for safety, but under the Nationalist Government their houses have been repaired and, I understand, they are again living in them.

From Chinkiang is a short run of a hundred miles to Nanking, the capital of modern China. This is a place about whose recent history, let alone its interesting past, one might talk for hours. Here, only three years ago, British subjects were shot dead on the lawn of the British Consulate, the British Consul himself was wounded, and men and women escaped in all sorts of ways; one party lowered themselves by a rope of sheets over the wall by which Nanking is surrounded; another was hidden by their Chinese servants and smuggled out to the rescuing men-of-war. Here, too, but for the timely fire of H.M.S. "Emerald," there is no doubt at all that there would have been a massacre of foreigners besieged and in extremis in the house of the manager of the

Standard Oil Company. In October, 1927, when I went there, there were only three or four British men in Nanking; the city was crowded with soldiers; the same victorious army that had advanced from Canton; Borodin was there and anti-foreign feeling was running high. The Consulate, a large house standing in its own grounds, had been looted from top to bottom; not a stick of furniture nor rag of carpet remained, the grates had been removed from the fireplaces, and the electric light fittings had been torn down. In the Vice-Consulate even the floor boards had been removed, and the whole ground floor was used for stabling the soldiers' ponies. Yet two years later, in the Summer of 1929, the British Consul-General held a reception on the occasion of the King's birthday at which were present not only the British Minister with his colleagues, representing every nation of the world, but all high Chinese officials. Moreover, all these guests arrived in motor cars, a vehicle which two years before scarcely existed in Nanking, and if it had existed could not have travelled far as there were no roads. Now there are fine straight roads everywhere, and hundreds, even thousands, of motor cars. Such is the capital of China and the seat of government to-day.

At the next port up river, Wuhu, there is another small British community dependent very much on the gunboat commander, as there is no resident Consular representative. From Wuhu we go to Kiukiang, noted for pottery and silver work, situated near the entrance of the Poyang Lake, which opens up a huge tract of the Kuangsi country. Kiukiang is of importance to foreigners because it is at the base of mountains at the top of which is Kuling, a place where their wives and children go to escape from the great heat of the river.

Above Kiukiang and six hundred miles up the Lower River we arrive at the mouth of the Han, and the three cities of Hankow, Hanyang and Wuchang. Hankow is the headquarters of the gunboat flotilla; an unattractive place except for what the foreigners, especially the British, have done for it; it is cold in winter and very hot in summer. In the world of trade, however, it is of very great importance. I will refer to its political significance later.

Above Hankow we enter on the Middle River, and another six hundred miles through flat, low, and fairly wooded country, a paradise for sportsmen: pheasant, deer, pig, etc., are plentiful, with every sort of waterfowl from geese to snipe, but unfortunately brigands also flourish in this district. It is nearly three hundred miles before we come to the first important town of Shasi, a place with an evil reputation, but here, nevertheless, a British firm has recently built and opened an enormous cotton pressing factory. Formerly all the cotton was picked and pressed

at Hankow, the cotton bales being floated down in bulk from the Shasi district. By pressing it at Shasi, four bales into one, one quarter of the cargo space is required and unlimited labour is available. This factory employs some three thousand girls picking over the cotton alone. Shasi used to be chiefly associated with pirates, but now the whole place has an interest in the ship carrying cotton arriving safely at the market, and pirates are likely to become less popular.

Leaving Shasi, a daylight run takes us to Ichang, passing Itu creek and village, the scene of the kidnapping of a British captain out of his own ship at anchor and the shooting of several of the crew by pirates.

Just before arriving at Ichang we get to the real hilly country, and the town itself lies near the foot of a range of mountains which look as if they must bring the river to a full stop, and from here it would seem that every characteristic with which we have become familiar abruptly changes. All the way up from Shanghai, currents have become stronger, and corners and bends more difficult; above Hankow very rapid changes of the channels are expected and occur, while the navigation above Hankow is really difficult in the winter months. All gunboat captains are, however, expected and do pilot their own ships up and down anywhere between Shanghai and Ichang. Above Ichang it is a different matter; the bed of the river is hard rock with formations of needle rocks which rise from it. These, combined with a current which runs from eight knots in the gorges to fifteen knots in the rapids, would quickly tear the bottom out of a ship if she touched.

Very roughly, this section of the river as far as Wan'sien is divided into gorges and rapids. In the gorges the water is deep and navigation comparatively easy, the sides rising sheer 2,000 feet or so. Rapids occur where the shallows pass over some ridge or a series of ridges, and the river breaks and boils, so that there is plenty of what the Chinese translate as Chow water. The current in these rapids is very strong, and even a full power ship has difficulty in making headway. Coming down river you can imagine what it is like going full speed to get the maximum steerage command.

All this time passing from Hupeh on the North bank and Kweichou provinces on the South, we are in Sze-Shuan, a province which although part of China, and till recently like the remainder under the Manchus, is in many respects a separate nation. It has a population of about forty-five to fifty millions and an area about the size of France, Spain and Portugal: a rich country given over at present very largely to poppy growing.

There are many important towns we passed after leaving Ichang and a good many of evil repute. We are unlikely to do this stretch without being fired at from the bank. A small place off which we shall probably anchor on the first night is Patung, where the unfortunate Bishop Janis and his two chaplains were recently murdered. In connection with this tragedy it is interesting to note how even those who know the Chinese so well get caught.

At the time the captain of the "Siangtan" was captured, I got in touch with all and sundry who might help me trace his whereabouts. The Bishop very kindly came off to see me, and got his people to make enquiries in the market places. I remarked that they would catch him, the Bishop, one day; he said he was not afraid as they knew that he had no money and no one would be allowed to ransom him even if they should. However, while travelling in his diocese he happened to meet one of the travelling brigand bands, and he and his party were just killed as foreign devils.

Half way up the Upper River we get to Wan'sien, a name familiar enough three years ago and a place associated with a case which I believe is still sub judice, or at least the Chinese think it is. Wan'sien is an important centre of the wood-oil industry, and not unconnected with opium.

Another two days steaming, and we are at our limit, Chungking; I have read, and can well believe, that Chungking is the fourth most populous city in the world.

This closes a very bare outline of the river on which our gunboats work and their crews have their being. But a short reference is necessary to the two principal lakes opening on to it.

Each of these is roughly 90 miles square, very shallow and largely dry in the low water season. The Poyang Lake, the entrance to which I have referred as being near Kiukiang, does not affect the gunboats as there are no British permanently resident on its shores nor British interests in its immediate vicinity. The Tungting Lake is of considerable importance. Entering it at Chenglin, more than a hundred miles above Hankow, we cross the Lake to enter the Siang River. Some fifty or sixty miles up the latter we reach the important city of Changsha, one of the best built cities in the river basin and a centre supplying, I believe, 60 or 70 per cent. of the antimony demand of the world. It is also on the direct route of the proposed railway from Hankow to Canton, a railway which is bound greatly to affect Changsha as a trading centre.

You may have seen recently an article in *The Times* as to the pros and cons of keeping a British gunboat at Changsha all the year round. It is opportune then to refer to a phenomenon of the river which regulates all river problems to a large extent. Just as we have in all parts of the

world a daily rise and fall of tide, so in the river we have an annual rise and fall, which is as much as 100 feet, and the changes of level are so violent and rapid that a ship may be floating happily in 20 feet of water one day and be high and dry the next. At Changsha this problem is a particularly anxious one; the water by November has generally fallen so low that, although a gunboat can float off the town and can move about to a certain extent, she cannot pass down the river, which in places will have no more than a foot of water until the following April. The foreign population is, therefore, dependent on a winter guard, which cannot be reinforced until the Spring. Under normal conditions the gunboat should be safe, for her armament is such that no bandit band, however strong, would dare tackle her at rifle range, and luckily they have only very primitive artillery, while in emergency she would provide a refuge for the foreign merchants and their families. She is, in fact, a fighting ship employed to the maximum of her design and the training of her crew, and I can imagine no more interesting command for a young officer than the gunboat at Changsha.

It may be said, roughly, that in the Lower River districts, including Hankow, semi-Western methods of government are to be seen. Steamers ply regularly up and down in the season, that is the summer, during high river, ocean-going steamers pass up and down to Hankow. The foreigner, as a specimen, is plentiful. There is, in fact, much obvious evidence of Western civilization; more and more Chinese adopt a style of modern clothes and imitate foreign methods of living.

Above Hankow the foreigner is more scarce; to land in or near a village is to invite the curiosity of men, women and children, and it is strange that the more remote the village the more friendly they seem. More than once I have known the local linguist pushed forward to warn me not to go in this or that direction because of "bad men," otherwise brigands, for this, the five hundred mile stretch between Hankow and Ichang is the land of brigands. They may be called communists, but are really plain robbers and murderers of the most ruthless kind.

Further up, at Chungking and beyond, almost up to the border of Tibet, law and order is reasonably established, and I have walked down from the hills at night with no other fear than that of stepping into a paddy field by mistake.

#### THE RIVER POPULATION.

Now we come to the peoples of the river. First the foreigners. British and Japanese are generally represented at all ports. They are general traders, and between them control most of the carrying trade, both passenger and cargo. The chief interest of the Americans is the

Standard Oil Company—trade rivals to our Asiatic Petroleum Company. There are Germans who are also general traders, and French and Italians who are mostly engaged in clerical work. In all the ports there is a mixed community, and in this the British certainly hold their own both as to type and ability.

It is, of course, of the greatest importance that the Rear-Admiral, Yangtse, should know intimately all the Consuls and Consuls-General on the river, for it is largely on their lifelong knowledge and experience that he depends for information. I can only say what a pleasure it was to work with men of such great knowledge and sound judgment, and I always greatly valued their friendship.

Turning to the Chinese themselves, we find there is a very strong provincialism, which one can only suppose will not diminish for very many years. There is the immaculate gentleman from Nanking or Shanghai, speaking English fluently and perfectly, probably speaking French or some other language equally well, an easy conversationalist, well and correctly informed of world affairs. A few hundred miles up the river we come to the land of bandits and pure savagery. Yet any of the well-known names in the Nationalist world are those of young men, almost all under fifty, with a record of university education in America and business training in Shanghai, Hongkong or Canton, but with little or no personal knowledge of the great Inland Provinces separated by tedious journeys and a primitive life to which they are not accustomed.

#### PIRACY.

Highway robbers and pirates are perhaps the natural and historical result of prolonged civil wai in any country. We read that it was so in England and it certainly is so in China where there are not even two parties or three parties but scores of armies, to a large extent independent of each other or owing merely a loose allegiance to some more powerful leader, yet ready to break away and join an opposite side for cash. And it is the rebelling generals who, when they meet with defeat, loose on the countryside hordes of bandits and robbers. The effect is that incidents are continually occurring in riverside towns which may involve danger to British lives. With these our gunboats are called upon to deal, while at all times they have to be watchful and alert to meet any emergency.

Above Hankow there is no civil government in the land even of the most primitive type, and I believe it is true to say that nowhere is the British gunboat more welcome, not by the foreigners, for there are none or practically none, but by law-abiding Chinese agriculturists and especially river traders; for if the foreigner suffers from time to time

from pirates and brigands the Chinese inhabitants suffer a thousand times more.

It was in this district that on one occasion we came abreast a cluster of big sailing junks at anchor, and as we approached there was a terrific hullaba 100. I therefore told the captain to stop and see what was the matter. It appeared that less than an hour before the junks had been boarded by pirates and looted. An old man, described as very rich, and two girls had been borne off as prisoners; the pirates had escaped in a tug less than half an hour before our arrival. It was not strictly our business, but the fewer pirates about the less danger to British shipping, the safety of which was our business, so we gave chase, and eventually overhauled the tug, but only brought her to just before dark by a longrange shot, which fell abreast her. As so often happened, she ran her nose into the bank and the pirates escaped before we could get alongside; however, the old man and the ladies were intact, the latter extremely frightened. They probably thought we were a brand of superior pirates, and it was a case of out of the frying pan into the fire. However, we took the tug and the prisoners back to the junk master as I wanted to find out how far the tug's crew were implicated and how far they had been pressed. The junk master came on board. He was a huge man, and, it being winter, was dressed in quilted clothes which made him appear to be really enormous. All the interpreters in the ship were mustered, and they all took a hand in the pow-wow that went on for an hour or more. Eventually it ended in gratification all round, and the big junk master made the ladies, who by now were all smiles, realize that they were safe. Much Kow-tow to me, and "thank you, Master" resounded on all sides.

Such is a phase of the gunboat work which, perhaps it is hard for the governing official to understand or, if he does understand, to admit; but the so-called "gunboat policy" is the greatest godsend to the dwellers in the riverside villages and towns.

The following exchange of signals illustrates an episode: one of many:—

From "Widgeon," at Changsha, to R.A.Y.

"Telegram from Changtch.—For six consecutive days and nights been under continuous fire, captured, tied up, received painful but not dangerous spear wounds, eighteen hours suffering outrages. Without necessary food or clothing, then managed to escape to Mission. All personal possessions looted. Agency wrecked. Stocks depot reported safe. Motor boat safe, one sailor killed. Catholic Mission completely looted."

Then followed a list of foreigners of which there were six men and one woman, and the message ended: "all suffering strain, cannot state how we can leave, please inform necessary authorities."

R.A.Y. to "Widgeon."

"Immediate—is there any shallow draft tug available and suitable to man and arm and make Changtch."

" Widgeon" to R.A.Y.

"Last seventy miles limited to eight-inch draught. No local launch available."

Follows a series of questions and answers to different S.N.O's to find suitable craft. Next day:—

" Widgeon" to R.A.Y.

"Have arranged to retain B. & S. tug 'Chuchow,' draws 2—4 feet."

R.A.Y. to "Widgeon." To all lo seried had been moon entres and

"Tell Consul-General I agree; armed party will only be sent last possible hope of saving life. Have your tug ready, it might be possible to meet party escaping. It is clear attackers are soldiers or local bandits."

Next day more information came from Changtch that foreigners were in great danger and must escape. Then came a welcome rise to 3 feet, so that a relieving expedition consisting of one officer, six men, two Lewis guns and accompanied by the Consul-General started. For three days there was no information, and then came a welcome wireless from the "Widgeon" to say the "Chuchow" was returning with all foreigners from Changtch safe.

It is worth noting that only one of those foreigners was British, and it is only the British organization on the river that could possibly take action in a case of this sort.

Now besides the danger to the small and scattered communities, absolutely dependent on such help and protection as the gunboats can afford them, there is the constant danger to shipping on the river. This is of two kinds; the most common is that due to parties of brigands firing from the bank. This is pretty constant, annoying, but not serious; all the ships plying above Hankow are well protected round their bridges and passenger accommodation, so that casualties are few. We had one or two chances of giving a band of these pirates a good dressing down, although we kept strictly to the rule that we must never fire unless fired at. But it was annoying, sometimes, to have to pass a crowd of these miscreants no doubt waiting for some unfortunate merchant ship, although they would not fire at us. These parties occasionally grow

bolder, and having brought to a tug by rifle fire from the bank, they board her and operate chiefly against native sailing craft. But they have also been a nuisance to the tug and lighter trade, which is mostly in the hands of British or Japanese companies. Two of these tugs we were able to round up, and although most of the occupants escaped by running the craft into the reeds and jumping ashore, we secured six wounded who were duly shot, and we had no more cases of that nature.

Then there is the more troublesome phase of piracy which has been so conspicuous in the outer waters, especially in the vicinity of Bias Bay near Hongkong.¹ The method employed is for pirates in any number to go on board a steamer as passengers, and, after sailing, to overpower the officers and crew. Generally the gang has made a trip or so in the same steamer beforehand, so as to find out if there are any weak spots in the look-out and general alertness of the white officers. When it is realized that usually there are only two white deck officers and one in the engine room, and that the rest of the crew are native, while the ship carries perhaps a thousand Chinese passengers, it is not difficult to imagine that the white officers in this trade require sound nerves.

In 1928 piracy of all kinds became somewhat intense, and to make matters worse, attacks were made on the crews of light-vessels, marking the channels. The position of these have to be continually changed, because as the river rises and falls old channels close up and new ones are scoured out by the current. It was the usual custom for the crew of these light-vessels to flag a passing steamer to stop and put a message on board to the nearest river inspector giving information of any radical changes in progress. The steamer, having stopped, became an easy prey to robbers, who came off in the Customs sampan belonging to the lightship. The pirates also became aware that the Inspector's boat came round at stated intervals to pay the lightkeepers; so, as soon as the launch had gone, they went on board and relieved the unfortunate men of their wages. Naturally, the service was disorganized, and the climax came when they boarded the launch itself, shot the crew and looted everything; the English Inspector only escaped by chance because on this occasion he had left the launch a few miles down the river.

In consequence of these activities the whole of the Middle River shipping was about to come to a stop; it was by no means all British, but a valuable proportion was. So I undertook to keep the river open for all trade; this meant very heavy extra work for the gunboats; two had to be constantly sounding channels, moving lightship and buoys, etc., very specialized work for which they had no experience.

<sup>&</sup>lt;sup>1</sup> See article on "Piracy of S.S. 'Hai Ching'" in R.U.S.I. JOURNAL, August, 1930; and "The Work of the British Navy in the Far East," February, 1929.

That the work was well done can be justly claimed, for the shipping was not delayed a single day nor did a single vessel get ashore during the three months before it was possible for the river inspectorate to recommence duty.

To counteract the firing from the banks and possibly internal pirates, it was necessary to put guards on all British ships and on the worst section between Chenglin and Shasi a bi-weekly convoy was introduced. While these activities were in progress in the Middle River, we had a local civil war on the Upper River requiring reinforcements and a bad outbreak on the Lower River, so that the masters of ships were refusing to move without guards, and at one time we had as many as 150 men away in merchant ships on guard duty. Of course, these could not all be supplied by the gunboat crews and the stationary cruiser at Hankow, so I had to appeal to the Commander-in-Chief, who was always ready to help at a moment's notice, even though, I have no doubt, he often thought us a great nuisance.

## OPIUM.

There is a feeling, indeed it has been stated openly, that British traders were, in the past, responsible for hastening the downfall of China by selling there large quantities of opium imported from India. That opium was at one time imported from India is no doubt a fact, but the opium poppy and the opium drug habit were not imported into China. In any case, there is no doubt that the vast quantity of the drug now retailed in China is grown in that county, mostly, perhaps, in the province of Szechuan.

Up country the drug is exceedingly cheap, that is the grower gets very little for it—say 5 to 10 cents. an ounce. The consumer at Ichang pays 2 to 3 dollars an ounce, and the value increases further down the river. Thus it is the middleman who reaps some 200 per cent. profit. Moreover, it is a commodity which in its prepared state is not very heavy and easily handled.

The quantity passing through Ichang alone is colossal. I especially mention Ichang because that fort is the gateway of Szechuan and the place where normally all cargo is transhipped from the specially constructed steamers and junks capable of navigating the rapids to the larger and normal Middle and Lower River traffic.

It is no part of the work of the British Navy to interfere with the passage of opium from one province to another, even if we could, but its very value and the way it is handled becomes a real danger to everyone, and particularly to British ships and British officers, since we are the only nation who consistently refuse to handle it.

Opium, like other commodities, was and still is, on paper, the concern of the customs, and the taxes on opium are particularly high. Whether the inventor was Borodin, Eugene Chen or who I do not know, but somewhere about 1926, when those two were at the zenith of their power, great play was made with regard to the suppression of the opium traffic, and what was really a special armed customs organization was put into being under the euphonious title of "Bureau for the suppression of opium." This was hailed by the purists in these matters as a great advance for the moral welfare of China. The opium trade is, in fact, an enormous monopoly; moreover, the great revenue from this source, which should be controlled by the legitimate customs inspectors under European scrutiny, has passed into the hands of a body whose masters no one knows and whose powers appear to be excessive.

The danger of this trade to British shipmasters and their officers lies in the fact that while they are forbidden to carry opium in any shape or form, it is easily smuggled on board, and whatever they do is likely to lead to trouble. If they find it and throw it overboard they are risking their lives. If they find it and turn it over to the legitimate customs, whose duty and practice it is to burn it, they risk not only their own lives but the lives of the customs; while if they find it and hand it over to the opium police they run a heavy risk of being accused of being in the smuggling ring. At best they know they are handing it over to the monopoly or inciting the enmity of some other less powerful but possibly dangerous smuggling concern.

## THE GUNBOAT FLOTILLA.

The gunboat flotilla is, of course, part and parcel of the China Fleet, and works directly under the orders of the Commander-in-Chief, being administered by the Rear-Admiral, who is exclusively concerned with the conditions on the river and keeps the Commander-in-Chief constantly informed thereof.

There are nine towns on the river not counting Shanghai where there are permanent British interests and traders living with their wives and families. There are two big British shipping firms also who have regular passenger and cargo steamers plying up and down the whole stretch of the river, while a third line trades exclusively in oil.

To meet these commitments we have thirteen gunboats, of which one is the flagship and must, therefore, be free to move anywhere at a moment's notice. One always, and two sometimes, will be at Shanghai refitting. It is desirable, indeed necessary, to keep a gunboat at each port where there are British subjects, for even with the closest study of the situation no one can say where the next danger point will be, and

it is pretty safe to say that every day throughout the year there is pressure at some point on the river, either necessitating reinforcement of the gunboat stationed there or at least anxiety and consequent arrangement for reinforcement at a moment's notice.

There is, besides, the shipping problem, the necessity for constant patrolling between ports, convoys and so forth, and actually the flotilla would not be numerically strong enough without assistance from the fleet. This assistance takes the form, since Nanking became the seat of government, of a cruiser being sent frequently to Nanking and another to Hankow. During the winter or low river months, responsibility at these two places is practically taken off the shoulders of the gunboats, not exactly to their liking, because it means they lose Hankow—quite the best spot for officers and men on the river.

On the whole the men have a bad time; weeks go by without a chance of landing, and even when they do get ashore it is not safe to do more than just walk on the bank. Some places are, of course, much better than others—Wuhu, Changsha and Chunking being the favourites, simply on account of the facilities there are for recreation. The officers have more to interest them; in fact if they take their duties seriously—and all of them do—and set out to study the local problem, they have work both of great value and absorbing interest.

The system of intelligence is very complete. Every evening a wireless report is made by the S.N.O. at each port to the R.A.Y. These are sifted out in H.M.S. "Bee," the R.A.Y.'s flagship, and if necessary a synopsis is sent to the Commander-in-Chief, the Minister in Peking and the Admiralty. Consular and commercial telegrams are also sent daily by means of the gunboats; the wireless staff of the gunboat flagship probably handles as many or more messages daily than any other ship in the fleet.

It is not too much to say that the system of gunboat control by the Treaty Powers—a system which the Chinese Government could not have carried out unaided—and to which the British Government has contributed so large a share, is at the present moment, and has been for the past five years, the one bulwark which has prevented complete chaos in China. It has enabled merchants, both foreign and Chinese, to continue to function in the most surprising way, and it is a fact that, in spite of revolution, pillage, brigands, pestilence and famine, China's wealth, as indicated by the Maritime Customs Returns, shows an annual and consistent advance.

One must have great sympathy with the present Government of China. They started badly under the wing of the Soviet-Russians. They had the courage, even the audacity, to root them out and deport the lot. They have had to withstand rebellion by one after another of

their most trusted generals, and they have had what is called a thoroughly bad press, both in Shanghai and England.

Twice Chiang Kai Shek has reached out and crushed rebellion in Hupeh; these uprisings were on such a scale that many people thought he could not do it. Recently he has defeated Feng Yu Hsiang, and Yen Shi Shan and crushed the Kuangsi rebellion. A man who can do these things and at the same time carry out great road building schemes, railways and so forth, is no fool.

The greatest danger is, I think, that the present government of China may go too fast. They have, not unlike other governments nearer home, a very strong extremist party, which is led by young students largely trained in America, and it may at anytime get the upper hand. The cry of China for the Chinese, justifiable though it may be, is accompanied by the ever-popular cry, "down with the foreigners." This student class is immensely conceited, and leads the people in a way it is difficult for us to understand. A well-known older statesman of China recently wrote an article in an English periodical. He ended with the following paragraph:—

"The greatest disservice the foreigner can do to China would be to give up the Consular Courts, and the concessions and other rights, before China has herself established a system of legislation which can ensure equal justice to Governor or coolie, Chinese or foreigner."

Many of them—perhaps all the merchants and older statesmen—know

that this is true, but they are not in the majority.

## THE CHAIRMAN:

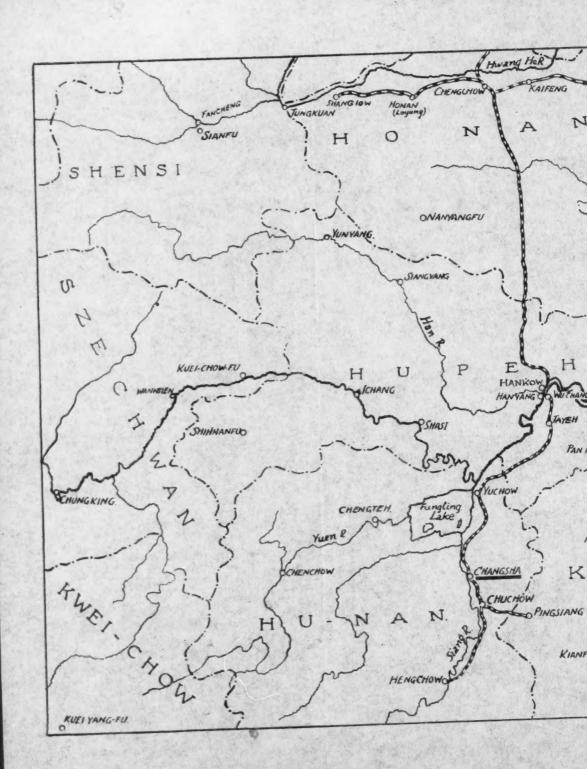
The Lecturer has referred to the Consul-Generals, the Consuls and the Vice-Consuls, and remarked how very useful and helpful they were to naval officers. I can assure you that the work which those gentlemen do is beyond belief. They keep up British prestige in the most wonderful way.

If I may critize anything in the lecture it is that Vice-Admiral Tweedie did not say enough about the Commanders and Lieutenant-Commanders in command of the gunboats. They have a very trying time; they are placed in positions of great trust, and frequently have to rely entirely on their own initiative.

Admiral Tweedie had not time to give you any of his wonderful stories, but I must mention one which will give you some idea of the sort of thing our gunboats and their Captains have to do. A steamer had been boarded at Wu-Hu by 3,000 Chinese troops and had been made to convey them down the river. A gunboat was ordered to intercept her and unload her. She picked up the steamer, anchored her at the next port, and made the troops disembark. While the disembarkation was taking place the captain of the gunboat requested the Chinese general and one or two of his satellites to come over to his cabin. Once there he made quite certain that they could not get out again, and demanded 7,000 dollars for the damage caused by the troops. In a very short time this was produced. That was what I thought ready resource. If the negotiations had been conducted on paper we should never have got a penny.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.









## COMMUNISM ON THE YANGTSE

(The following article has been specially written for the R.U.S.I. JOURNAL by a contributor who has first hand knowledge of the subject.—EDITOR).

A LTHOUGH the tedious details of China's never-ending civil wars have long ceased to arouse much interest in England, recent events in Changsha should direct the attention of the whole world upon the serious state of affairs which is arising in the Yangtse Valley as a result of the spread of communism.

It would be difficult to imagine a more fertile field for Bolshevik exploitation than certain parts of Central China to-day. The lawless state into which a large part of the country has been allowed to sink, the distressing condition to which the poorer classes have been reduced by years of civil war and the ravages of bandits, and the withdrawal of Government troops to the fighting area in the North, have long prepared the way for the communist propaganda which is now flooding the country districts. With the seeds of 1926-27 already planted, it is hardly surprising that communism has succeeded in gaining a firm hold among the peasantry, who have everything to gain and nothing-so far as they can see—to lose from a movement which appears to offer them unlimited chances to take what belongs to others better off than themselves. Communist, in the true sense, the illiterate Chinese peasant will never be: but if he is persuaded by clever propaganda that other men's possessions are equally his possessions, that the rich have no right to their riches, and that the foreigners are at the bottom of all his ills, then it is not surprising that he takes what he can get, waves a red flag, and shouts violently anti-foreign slogans.

Early in the summer of the past year, communist-bandit armies made their appearance on the Middle Yangtse, and before long a large part of the country between Hankow and Ichang fell under their control. Peasant leagues were re-established, village Soviets instituted, and towns and villages which resisted the communist movement were pillaged and burnt with exceptional savagery. Professional bandits, recognizing in this form of communism a branch of their own line of business, lost no time in throwing in their lot with the movement: soon Red Armies,

owning some kind of loose but quite definite allegiance to the central authority of the Communist Party of China, were soon spreading the new gospel with fire and sword over wide areas. These Red Armies were in most cases well-organized, well-disciplined and of course well-paid from loot; they were estimated in the *Pravda* in August last to number at least 200,000 fighting men, together with considerable reinforcements of guerilla detachments, Red Guards, Young Guards and numerous armed peasant organizations.

At this early stage, law and order might quickly have been restored by energetic action on the part of the Chinese Government: but Nanking did nothing, except to issue bombastic proclamations and to suppress a foreign newspaper in Hankow which published accurate reports of communist depredations. Not even a Chinese gunboat was moved to the affected areas, where foreign ships on their peaceful missions up and down the river were being fired on daily; while the Chinese army was far too busy in the North to worry about what was going on in the Yangtse Valley. By this failure to scotch the communist movement in its early stages, a very considerable and wealthy portion of Central China was allowed to sink into anarchy without a finger being raised to save it, or, apparently, anybody paying very much attention to the fact.

From being a nuisance, the Reds soon became a definite menace to Chinese and foreigners alike. On 3rd July Yochow and Chenglin were successfully raided, and only the presence of foreign gunboats saved the lives of the foreigners who were there. The British gunboats "Bee" and "Teal" were heavily fired on, the latter having two men wounded; the United States gunboat "Guam" had one man killed. Three weeks later a gunboat, patrolling the Middle Yangtse above Chenglin, located, bombarded and destroyed communist trenches flying the red flag from which a river steamer had been fired on the day before by muzzle-loading guns using grapeshot and nails.

This, then, was the situation towards the end of July. Communist influence extended, broadly speaking, over the greater part of Kiangsi province South of Nanchang, the mountainous and eastern districts of Hunan, a large part of Hupeh, and a wide strip bordering both banks of the Yangtse between Hankow and Ichang. A most successful raid had been made on Yochow and Chenglin three weeks before; communism was gaining a definite hold among the peasantry; the incapacity of Nanking to maintain any sort of authority in the affected areas was becoming more and more obvious, and nearly all the Government troops had been withdrawn to the fighting area in the North, where the war, like most civil wars in China, was approaching a stalemate. The only question was—when and where would the Reds strike their next blow?

On Saturday, 26th July, information from reliable sources reached H.M. Consul at Changsha that a force of communists numbering 10,000 men with rifles and machine guns, and 20,000 "pikemen" armed with spears, was advancing on the city, being then distant only a few miles from the East Gate. Changsha, the provincial capital of Hunan and one of the richest and most important, as well as one of the most celebrated, cities in China, is a Treaty Port of some 700,000 inhabitants, situated 92 miles up the Siang River, South of the Yangtse. It is a handsome city, densely populated and justly famed for its many fine private residences, temples and memorial halls. It is also an important political, business and missionary centre. The city stands on the right, or eastern, bank of the river, most of the foreign residences, apart from the missions, being situated on a narrow island, two miles in length, in the middle of the river, the channel between the island and the city being about five hundred yards across.

On receipt of the information referred to above, all foreigners were immediately advised to leave the city and cross to the island, in case an evacuation should become necessary. The foreign naval force then in Changsha consisted of the British gunboat "Teal," the United States gunboat "Palos," and the Japanese "Futami," all of which were anchored in the river between the island and the city. H.M.S. "Aphis," at that time at Chenglin, was ordered to proceed to Changsha that night, and arrived the following afternoon.

The Siang River is normally open for ships of 6 ft. draught from May to October: but as a result of an exceptionally dry summer the water was very low by the end of July, and the "Aphis," drawing 5 ft. 2 ins., was only just able to reach Changsha, getting soundings of 6 ft. on several occasions on the way up. The two worst points are the rock channel at Hsianikong, nine miles below Changsha, and, an even shoaler patch two miles below the city. As will be seen later, on account of the falling water, the "Aphis" had to drop down below these two points in order to avoid being locked in.

The situation on the afternoon of Sunday, 27th July, was slightly obscure. It was reported that the garrison, numbering about 8,000, was in touch with the main body of the communists a few miles to the North-East of the city; but although there was as yet no reason to suppose that the Reds were breaking through, signs of extreme nervousness were evident among the Chinese civil population ashore. Chinese refugees were beginning to stream across the river, and every tug and lighter and steam launch and junk was besieged by crowds trying to get away before it became too late. Most of the foreigners were by this time concentrated on the island, with the exception of a few missionaries

who elected to disregard the consular warning sent out on the previous day.

At 9 p.m. the excitement on the Bund suddenly increased, and a few minutes later stray rifle shots began to be fired across the river. A searchlight disclosed the Bund congested with large numbers of soldiers who were commandeering sampans and junks and crossing to the island. It was obvious that these troops were the retreating garrison, and it followed that the fall of the city to the Reds was imminent. After a brief consultation at the British Consulate an immediate evacuation of all foreigners to gunboats was at once decided upon, and at 9.30 p.m. the alarm signal (sound rockets and blasts on the syren) was fired from the gunboats, warning all foreigners to assemble at the British Consulate as soon as possible. An armed party was also landed from the British and American gunboats to cover the evacuation—a wise precaution, as small bands of retreating soldiers on several occasions attempted to enter the Consulate.

By 11.30 p.m. the evacuation was complete, with the exception of three American missionaries and two Italian priests who were unwilling to leave the city, and six Belgian nuns who could not be traced. Considerable rifle firing and bursts of machine gun fire were now taking place across the river, and a number of casualties were caused among the Chinese refugees huddled together on exposed junks and lighters. At midnight all firing died down for a time, and an ominous silence hung over the city. Shortly afterwards the first fires began to break out as the incoming communists commenced to fire the Government yamens. Loud explosions occurred at intervals, and a large and growing red glare lit up the sky.

It may be permissible at this point to consider what might have happened if there had been no foreign gunboats in Changsha on this fateful night. How often in the past, in urging the abolition of the extra-territorial privileges of foreign Powers, have responsible members of the Chinese Government declared that China was herself perfectly well able to look after the safety of the foreigners in her midst? The events which took place in Changsha did not bear out this comforting conviction. In spite of the fact that the situation had been very threatening for some days, there was no Chinese gunboat in Changsha. After a very feeble show of resistance the entire military garrison of the city, headed by the Provincial Governor, fled across the river and left the civil population to the tender mercy of the Reds. If there had been no foreign gunboats present there can be no doubt that the entire foreign community, most of them missionaries, except those who might have been able to make a precarious escape by junk or sampan, would have

been massacred. The Reds were violently anti-foreign; large rewards were offered for the person of any foreigner, alive or dead. The intense savagery with which foreign property was looted showed that the foreigners, especially missionaries, were singled out for attack. No hostile action was taken by any of the foreign gunboats, except under the most extreme provocation and after fire had been directly and continuously opened upon them for an appreciable time. When, as will be seen later, the foreign gunboats did open fire, their action was universally applauded by the civil population of Changsha, who declared that it was the one factor which saved not only all remaining foreign property, but also the rest of the city, from further looting and destruction.

The next eight days witnessed an orgy of burning and destruction of both Chinese and foreign property without parallel since the days of the Boxers-far worse, as the Consul declared, than the anti-foreign outbreaks of 1927. The remaining foreign missionaries, with the exception of the Italian Father Baima, who fell into the hands of the communists, were with difficulty evacuated from the city early on the morning of the 28th by H.M.S. "Aphis": and after that, owing to the falling water, all the foreign gunboats were compelled to move four miles down river to the Asiatic Petroleum Company's depot. On the morning of the 29th, "Aphis," a heavy draught gunboat, was faced with the alternative of being locked in by the falling water or moving still farther down river: it was therefore decided that she should take all foreign refugees down to Hankow, and then return to Changsha as soon as the water should rise sufficiently. Accordingly, she sailed with 49 foreign refugees on board, including 12 British subjects, 14 Germans, 2 Norwegians, 6 Italians, 6 Americans, 3 French and 6 Belgians (26 men, 18 women-7 of whom were nuns-and 5 children). As the ship's normal complement was only 46, the addition of 49 passengers, most of whom were on board for three days, put no little strain upon her resources.

The foreign gunboats came into action on several occasions. On the afternoon of 30th July, the water having risen, H.M.S. "Teal" with H.M. Consul on board proceeded up river on a reconnaissance visit, intending—if no opposition were encountered—to examine the Bund and the island. On reaching the lower end of the city, fire was opened on the ship, and in order to avoid having to return it and thereby risking damage to property and injury to innocent persons, she turned back to the A.P.C. depot.

On the following morning the United States gunboat "Palos" proceeded up river to reconnoitre the harbour. As in the case of the

"Teal," she too was heavily fired on by rifles and machine guns, and as she was unable to turn back on account of the narrowness of the channel at that point, she returned the fire with 68 rounds of 3-in. and 2,000 rounds of Lewis gun .303, and had one rating wounded.

The Italian gunboat, "Ermanno Carlotto," which had arrived the day before, later in the day proceeded up river, was duly fired on, and replied with several rounds of 3-in. The Japanese gunboat "Futami" also engaged communist machine guns on the Bund with success on several occasions.

The "Aphis" was also fired at on the evening of 2nd August, after her return from Hankow, and was compelled to resort to 6-in. H.E. when the firing persisted after darkness had fallen. One round fired at the Bund produced the desired result, and although the ship continued to be sniped all night by irresponsible members of the Government troops on the left bank of the river, no further shots were fired by the communists on the right bank.

This was perhaps the first occasion on which firing on a city by foreign warships in Chinese waters did not result in an immediate outburst of anti-foreign feeling. The only remarks which were heard among the Chinese after the event were expressions of regret that the firing had not taken place earlier and been continued longer. No doubt the explanation of this marked change in the attitude of the Chinese towards the action taken by the foreign gunboats is to be found in the fact that, at any rate among the commercial and shopkeeping classes, it is realized that communism is a much more immediate and serious menace than any foreign "imperialism" could ever be.

One of the most interesting incidents which took place during the communist occupation of Changsha was the arrival of one of the Provincial Governor's staff officers on board a British gunboat, with a formal request in writing inviting the co-operation of the British Navy in the projected attack on the communists by the nationalist troops. It was, however, not possible to depart from the fixed and declared international policy of non-interference in Chinese affairs: and the most that could be done was to adopt an attitude of benevolent neutrality. But there can be no doubt that the presence of the foreign gunboats, and their swift and vigorous replies to fire when fired upon, were a very considerable factor in the ultimate recapture of the city from the Reds.

The attack on the city by the government troops was twice postponed, and did not materialize till the early hours of 5th August. Prior to that date, the two Chinese gunboats, "Hsienning" and "Yungchen," which had arrived on 30th July, carried out daily bombardments of the communist positions, and it was largely due to their steady covering fire that the soldiers were able to make their crossing of the river in bright moonlight. By 6 p.m. the communists were everywhere falling back, and by 8 o'clock the city was once more in the hands of the nationalists. Although in the early stages of the Red occupation the government forces had shown a lamentable lack of initiative, the success of this attack was the result of an extremely well executed combined operation.

But even though the city was recaptured, the communists were certainly not defeated. They withdrew in good order and with small losses. It was never their policy to risk a serious engagement when they had already got all, or nearly all, there was to be had in the city. At the first sign of determined opposition they retired with their illgotten gains into the country, and it is a very great pity that the opposition which finally turned them out did not materialize earlier. Changsha paid dearly for every day of Red occupation.

Four hours after the communists retired, the writer landed with H.M. Consul and walked through the city, and it may be of interest to give a brief description of conditions ashore after eight days of communist occupation. The first impression was that the work of looting and destruction had been carried out in an extraordinarily wellorganized and systematic manner. Thorough discipline characterized the communists' temporary regime. No indiscriminate looting by individual soldiers was permitted. All proceeds went to a central fund. Small organized bands were sent round the city with definite objects in view. Perhaps their object was the looting of some foreign mission or office: in that case the doors were broken open, and then all the local hooligans and rough-necks were invited to step in and destroy everything they could find. Perhaps their object was to collect fines or to levy forced taxes: in that case, if the shopkeepers were unable or refused to pay whatever sums were demanded, the shop in question would be broken open and the crowd told to loot its contents. Only cash, silk, and rice were taken away by the communists themselves.

Damage to Chinese property was chiefly confined to the government buildings, all of which, with the exception of the Ministry of Education, were completely destroyed, hardly a stick or stone remaining standing, even the trees in the gardens being hacked down. Foreign property suffered severely, and would have suffered even worse than it did if it had not been for the firing of the gunboats which drove the communists away from the Bund. The B.A.T. Company's godowns and offices were looted clean, and every possible form of malicious damage done, short of pulling down the reinforced concrete structure of the building. Steel framed windows were hacked out, safes forced open and hurled through

the windows, radiators torn out, office furniture reduced to matchwood, and the floors left deep in papers and refuse. Beggars, deformed and dying, were camping in what had been the manager's office when the writer arrived there, and the stench which filled the whole building was revolting. Nearly \$100,000 worth of stock was looted, and every safe rifled. Jardine's house and godowns were looted with a savagery which the Consul declared was worse than anything he had seen during twenty-five years in China. Even the armchairs were disembowelled and the grates hacked bodily out from the walls. The hulk was burnt to the water's edge, and it was estimated that the total damage amounted to about \$600,000.

Other foreign offices suffered a similar fate, the A.P.C. and Butterfield & Swire being among the very few firms whose premises escaped serious injury. The Japanese Consulate was burnt to the ground, and all Japanese property on the mainland was looted. Luckily the communists did not carry out their original intention of wrecking foreign private dwellings on the island, the presence and activities of the gunboats doubtless causing them to hesitate before crossing the river.

Mission property, mostly situated well away from the river, suffered most severely. Only the Swedish Mission was spared—and that because it was overlooked. Every other mission was either looted or partially destroyed. The main building of the Episcopal Mission was destroyed. The Yale hospital was damaged here and there, and all medical stores stolen. The Roman Catholic Mission was looted but not burnt. China Inland Mission was looted and the roof pulled down. Evangelical Mission was ordered to be destroyed, but the work was not completed. The Norwegian Mission was looted clean, as were the German Blind School and the Presbyterian Mission, the latter being also partly burnt. The Y.M.C.A. main building in the city was untouched, being used by the communists as their headquarters: but the Y.M.C.A. compound outside the East Gate was cleaned out. The Wesleyan Mission was entered and the safes rifled. Those missionaries who did not obey the Consular warning to concentrate on the island on 26th July only escaped by the skin of their teeth. One of them, an elderly American, was robbed on his way through the streets, spent twelve hours in hiding, saw his own home and mission destroyed, and finally made his way to a gunboat in the early hours of the morning in a sampan after he had been given up for lost. Thus were these worthy and gallant, if foolhardy, people chased out of house and home, in most cases with little or nothing saved from the wreck, and their life's work destroyed before their very eyes. It was a bad day for the business men of Changsha: it was a bitter and a crushing day for the missionaries. Destruction of buildings in the city other than government and foreign property was small, but every street bore signs of the communist occupation. The walls were plastered with communist proclamations, handbills and posters, all painted with crude slogans. The scale and the manner in which these notices were distributed made it obvious that they were the work of organized gangs and not of haphazard enthusiasts. All the shops were closed and shuttered, many of them being sealed with paper seals bearing such inscriptions as "This shop has already been looted: do not enter": "This shop has paid a fine of \$3,000: do not enter": "This shop has paid two months' rent in advance: not to be taxed again." A number of shops which had presumably refused to meet the demands of the communists were cleaned out.

In all, it is estimated that the communists took away over \$2,000,000 in silver, as well as a great deal more loot in kind. The reports which appeared in the English press that they had been "bought off" with bribes of \$100,000 were much under-estimated and quite inaccurate: there was never any question of buying them off: they took what they wanted, and then went. Over a thousand leading Chinese merchants and shopkeepers who had failed to make good their escape in time were executed. Lists of "capitalists" who were to be put to death, in most cases with savage cruelty, were prepared during the first forty-eight hours of the occupation. All wounded and prisoners were killed. All people who were found to be natives of a certain city in the vicinity which had resisted the Red advance were shot. Three men in all families of five and one man in all families of three were conscripted as carrying coolies for the Red Army.

The Red reign of terror was followed by a "White" terror very nearly as severe and far more indiscriminate. The Reds did at least prepare lists of their victims: but the government troops merely exterminated everybody who was suspected of being a communist sympathiser. For a week after the Reds were driven out, the city was under the strictest martial law, while a systematic combing out for suspects was carried out by small bands of soldiers who were apparently armed with the powers of life and death. Executions by the hundred took place during these tense days: at least seven hundred persons were beheaded, and a great many more shot. On one occasion it was reported that three hundred victims were roped together and shot by machine gun fire outside the South Gate: whether this barbarous sentence was actually carried out or not, the fact remains that a terrible vengeance was taken upon all persons to whom the faintest shadow of suspicion could be attached.

Thus ended the communist occupation of Changsha. Except by killing the last traces of lingering anti-foreign feeling which may have survived from 1927, it benefited nobody. Even those who had helped themselves in the looted shops at the behest of the communists, were promptly put to death when the communists were driven out. Much loss was caused to foreigners: but what they suffered was nothing to the suffering of the unfortunate Chinese themselves.

What has happened at Changsha is no worse than the fate which has overtaken many other smaller cities during the last few months, of which less has been heard because foreign interests have been less directly involved. The writer has tried to avoid any exaggeration of any kind in the foregoing description of conditions under the communist régime: nothing which did not come under his personal notice has been inserted. But indeed the appalling results of the spread of communism in China at the present time do not need any stressing: a single voyage from Hankow to Ichang will impress them for ever on any observer's mind. The development of the communist movement in the Yangtse Valley, which led up to the sacking of Changsha, should disabuse the minds of those people who profess to see in it nothing more than a periodical recrudescence of banditry. Moscow, indeed, made no secret of its exultation over the success of the Reds. The latter withdrew in the end, it is true, but they suffered very few losses and they retired with much booty and with their prestige enormously enhanced. No attempt has since been made to defeat the Red Army in the field or to clean up communism in the affected districts. All the best troops are still locked up in the civil war area in the North, and there seems little prospect that any of them will be moved to deal with the much more serious menace on the Yangtse.

Meanwhile, conditions on the river are going from bad to worse. The whole of the Middle River between Hankow and Shasi is in the hands of communists, who fire indiscriminately at all ships from the banks with the fanaticism of Boxers, regardless of whether the ship is a gunboat with 6-in. guns or a river steamer with a guard of eight infantrymen from Shanghai. River survey work on the Middle River has been suspended since June, and in the low-water season during the coming winter it is questionable whether shipping will be able to continue running if conditions do not improve. Although the river survey is a branch of the Chinese Customs Service, the Chinese navy does nothing whatever to afford the foreign river surveyors any sort of protection during the execution of their work. Lightships and mark boats were withdrawn in July after their custodians' heads had been removed by communists. Foreign gunboats patrol the affected portions

of the river, but in spite of the fact that severe retaliatory measures have been taken against communist posts which have fired on shipping, the firing still continues. The firing is not very serious at present, it is true, being confined to rifle fire and the discharge of small muzzle-loading cannon firing grapeshot and nails, which seldom score a hit: but when a ship goes aground on the unsurveyed portions of the river during the low water season, it may be a very different matter, more especially as the river steamers are not provided with W/T.

A year ago the writer landed for a day's shooting, and was received with the greatest friendliness by the local villagers. To-day those same villagers are wearing red armlets and rosettes, waving red flags emblazoned with the Soviet sickle and hammer badge, and putting up the most violently anti-foreign posters along the river bank. Communism seems to have become almost a religion among them, and when from time to time mass meetings on the river banks are passed, speakers can be seen haranguing the crowds and working them up to a frenzy of enthusiasm. The movement is certainly sweeping through the country districts in a way no one would have believed possible twelve months ago, and the amount of destruction of life and property which has already been caused is immense. Indeed in these parts to-day whenever the sound of bugles is heard, it is said that hundreds of pariah dogs gather and follow in the train of the Red Armies in search of the food which they know will soon be theirs. The writer can vouch for having seen dogs eating human corpses on the river bank.

It is early as yet to draw a parallel between the present communist movement in Central China and the Taiping rebellion of seventy years ago: but the longer the restoration of authority is delayed, the more dangerous the present movement seems likely to become. Although at present, the eyes of the world are turned more towards India than China, it is time people asked themselves how long the world is to stand still while this vast portion of mankind is left to flounder in the morass of communist chaos.

of \$1d University and the control of the second state of a control of the control

# THE DEVELOPMENT OF COMMUNICATION AND COMMAND

By CAPTAIN F. S. MORGAN, Royal Signals (S.R.).

"There is one absolute principle which must direct all our combinations and dispositions, and this is that, in order to dispose of the adversary's masses, we have to ensure the working of our own."—Maréchal Foch.

"The proper co-operation of all arms wins battles."-F. S.

"Si vous coupez le téléphone, l'Etat-Major cessera de répondre : vous-en concluez sans doute que l'Etat-Major n'est rien de plus qu'un téléphone?"—Les Discours du Docteur O'Grady . . . . André Maurois . . . p. 17.

NTIL very recently the question of efficient intercommunication has been practically ignored in official histories and textbooks and by writers on the art of war.

Even the terminology is ambiguous, since the word "communications' is more likely to refer to roads and railways than to message-agencies; and its clumsier relative, "intercommunication," gives an impression rather of lateral touch (valuable but not vital) than of the complete and all-important nerve-system of command. Again, "Signals" conjures up visions of short-range flag-wagging; while "liaison" may mean anything or nothing—according to whether it appears in the Divorce Court news or is used to describe cocktail time in a neighbouring mess. A new word is badly needed, though the need is apparently recent, for only in more recent military writings has the subject been given other than the most cursory notice.

It may, therefore, be of interest to trace how far this factor of good or bad intercommunication has affected the issue in various particular cases; and to look at one or two historical examples of battle with a "Signals" eye. Since, however, the technical facilities available—and therefore the ratio between distance and time of communication—were virtually the same for Napoleon as for Hannibal, it is unnecessary to go further back in history than 1806 for an illuminating example.

We will take the encounter Battle of Saalfeld, fought on 10th October, 1806.1 The Grand Army was advancing in three columns, headquarters (Napoleon) being with the centre column. On the afternoon of the oth the distance between columns was about fifteen miles. The orders issued to the left column (Lannes) are our immediate interest. Dated from Nordhalben, they state:-"The Emperor will be to-night at Ebendorf (a 'bound' of twelve miles), Davout at Lobestein, Murat at Schleitz . . ." "News of the enemy will be received during the day. It is assumed that the enemy intends defending Saalfeld . . . " "If he is there with superior forces, you must wait . . . the Emperor will march with 20,000 men so as to arrive tomorrow about noon on Saalfeld via Saalberg." "If the enemy march against you with superior forces, you ought to retreat." "If the enemy has only 15,000 or 18,000 men, you must attack . . ." " If the enemy withdraws, you must occupy Saalfeld . . ." "What is most important is that you should send the Emperor news of your situation and of the enemy's three times a day" (author's italics).

This order is notable for its similarity in form and matter to a modern operation order—the great difference being in the alternative instructions to Lannes, dependent on future local conditions.<sup>2</sup> It was Napoleon who laid down the maxim that "plans should be based on reports which should be certain and true up to the last moment "3" and, conditional orders are the direct result of poor communications.

Actually, this order from the Emperor crossed a report from Lannes dated from Graffenthal at 5 p.m., and containing the sentence: "To-morrow, one hour after dawn, the whole Corps will be two hours from here on the road to Saalfeld, waiting for Your Majesty's orderswhich I hope to receive in the course of the day or of the night." Lannes' distrust of the communication system was amply justified, for Napoleon's acknowledgment of this report is headed "Edendorf, Oct. 10, 5 a.m."; that is, seventeen miles across country, or twenty-two by road, in twelve hours. This same acknowledgment, incidentally, and the order confirming Lannes' proposed attack, only reached the latter several hours after he had started—in fact just as the engagement was beginning.

It is worth noting that Lannes' Fifth Corps of about 12,000 men was sufficiently compact for the Marshal, who moved at the head of his infantry, to carry out personally the reconnaissance of the front, and to control his force effectively during the subsequent action-which

See Foch's "Principles of War," Chap. xi.
Cf. F.S.R. II. Sec. 134, 10: "Alternative plans, dependent on developments, should not be given in operation orders." 8 Foch's "Principles of War," p. 157.

took place on a front of only two (later three) miles. Under such circumstances, internal communication within the Corps presented no difficulty, and the absence of effective liaison with G.H.Q. gave the local commander considerable latitude. Properly used, it is what Foch calls "freedom of action as a function of obedience."

But on the Prussian side in the same battle this freedom had led Prince Louis to ignore an order from Prince Hohenlohe, so that, instead of retiring from Rudolstadt, he elected to move forward six miles to cover Saalfeld. Actually a second order, to remain at Rudolstadt, reached Prince Louis at Saalfeld at I p.m., four hours after he had become committed to battle. Thus on the Prussian side the delays of communication, with the consequent assumption of initiative by the local commander, led to disaster.

Finally, we may note that, though the battle was virtually over by 3 p.m., Lannes did not feel bound to report it to the Emperor till late at night. This limitation of the central authority seems to have been accepted as unavoidable, but it may account for the general tendency to concentrate all available troops for an extremely localized battle—since only in extreme concentration could a commander adequately control his forces. Wide converging or outflanking movements were too dependent on subordinates to be popular. But while communication in an encounter battle must largely be improvised, it is more than curious that no attention seems to have been paid to the development of more rapid means under suitable conditions.

Let us study the Prussian concentration in 1815. An example of this acquiescence in inefficiency can be found in the Prussian preparations for the 1815 campaign. The cantonment area occupied by the four corps under Blücher was sixty miles in depth and twenty-five miles wide, and the following is the appreciation by Clausewitz:—2" If the news of the enemy's arrival comes from Charleroi to Namur (22 miles), and the order for concentration is sent on from there to Liége (36 miles), sixteen hours will be necessary for that order to arrive, and another eight hours for the troops to be warned and to gather." Sixteen hours as a normal time for a journey of 58 miles along main roads—three and-a-half miles per hour—shades of Paul Revere!

In the actual event, Bülow's Corps at Liége received orders at 11 a.m. on 15th June to "move to Hanut with all speed." Bülow, however, decided to postpone his march till the 16th, and reported accordingly. But this report failed to find Blücher at Namur, nor did Blücher's orders

<sup>1</sup> Ibid., p. 97.

<sup>&</sup>lt;sup>2</sup> Ibid., p. 262.

(sent on the 15th) find Bülow at Hanut, as expected and ordered. This new order was to march from Hanut (where he should have been and was thought to be) to Sombreffe. Had Bülow obeyed the first order, he would have received the second. Equally, had Blücher received Bülow's notification that he was postponing his march, other plans could have been made.

Such were the fruits of a communication system (if such it can be called) on which no forethought had been expended. Yet how easily during the time of preparation could a system of relay posts have been organized along the vital artery, Charleroi—Namur—Liége. Allowing even so modest a pace as 10 miles an hour—a gentle canter—between relay posts, ten hours would have been saved in the time of concentration, and the IVth Prussian Corps would have been at Ligny.

The same attitude can be seen later, even after the electric telegraph had begun to revolutionize civil communications. This may be seen in the Austro-Prussian War of 1866. Though the telegraph was of occasional utility, as in the notification from the frontier post at Nachod of the sudden arrival of the Prussian advanced guard, yet its potentialities were not exploited. We still find military messages proceeding on their leisurely way; for instance, General Benedek's operation order to Raming's VIIth Corps left Josefstadt at 9 p.m. and reached Opocno (ten miles by road) at 1.30 the following morning. As a result it was impossible to get the VIIth Corps on the move at the time ordered, (3 a.m.) Again, there is no apparent reason why the orders should not have arrived by 11 p.m., or even 10 p.m.; and then the probable result would have been to have prevented the Vth and VIth Prussian Corps from crossing the frontier.

Again, take 1870. Four years later we see the telegraph being used with some freedom between Moltke at G.H.Q. and the Prussian Army commanders. Times were improved, too; a long order was telegraphed twenty miles (Herny to Pont-à-Mousson) in three and a half hours, from time of writing to time of delivery. But there is a lack of liaison between armies and their corps. "The 5th Cavalry division might have supplied information of a capital importance, had it been consulted" and the means were still primitive, as is shown in the Second Army order, issued at noon on August 6th:—"Every Corps will send an aide-de-camp every day to my headquarters. Such officers may use carriages, if need be, with their saddle-horse following the carriage, and must be further accompanied by infantry orderlies. Signed: Frederick Charles, General."

<sup>1</sup> Ibid., p. 247.

Possibly the supreme example in history of bad staff work combined with bad intercommunication is to be found in the Italian Abyssinian Campaign. The disaster at Adowa, involving nearly 20,000 men, was primarily due to Albertoni's brigade taking the wrong route, losing touch with the rest of the force, and failing to send any reports of its position.<sup>1</sup>

The campaign in South Africa, 1899-1901, is interesting. Looked at from the limited point of view we have adopted, it betrays a dual aspect, reflecting the duality of control exercised independently by the Director of Telegraphs and the Director of Army Signals.

The telegraph service, at first confined to the railway routes and therefore used for G.H.O. and L. of C. work only, was later extended so as to follow up the routes of marching columns. And towards the end of the campaign it developed into a network of telegraph and telephone lines joining up the system of blockhouses-a form of "area signals." For "Army Signals" the principal instrument was the helio, not only for local and tactical work, but also for long-distance communication. There is a considerable parallel between the use of helio for communication with Ladysmith during the siege (fifteen miles, with enemy intervening) and the use of wireless to Kut under similar conditions. The average time of messages in and out of Ladysmith was about three hours, including ciphering and deciphering. It is of interest to note that one urgent message "handed in" at Ladysmith at 3.15 p.m. on 6th January was not delivered to the relief force (owing to weather conditions) till after noon on the 7th-" Attack renewed. Very hard pressed."

It is as well that the cessation of communication occurred before this message was cleared, and not immediately after, for, as the Official History<sup>2</sup> puts it: "What effect such a communication might have had on the action of Sir R. Buller's force on the 6th can only be surmised."

In the tactical sphere it is a little difficult to separate the purely "signal" failures from the closely related Staff mistakes. The engagement at Spion Kop provides an ample supply of both.<sup>3</sup> The original orders provided for "signal communication to be established from Spion Kop as soon as secrecy is no longer possible." The crest was occupied at 4 a.m.—the event being marked by cheering—and a letter was sent by hand from the summit to General Warren's divisional headquarters at the base.

<sup>1</sup> See Berkeley's "Campaign of Adowa,"

<sup>&</sup>lt;sup>2</sup> Official History, Vol. II, p. 377.

<sup>2</sup> Ibid., pp. 374 seq.

Helio communication was established at daylight. At 8.30 a.m.; General Woodgate, commanding on the summit, was killed; and soon after the next senior officer gave a verbal message for transmission by helio. There is some conflict of evidence as to the actual wording intended,1 but the message as signalled was: "Reinforce at once or all is lost. General dead." This was received by General Warren at From this time till 2.20 p.m. no further news was received (the helio had been destroyed). This message received by hand at 2.20 had taken an hour and a half on its way. From that time onwards there was an intermittent exchange of notes, which often crossed each other in their slow progress; the confusion was further increased as those on the actual summit did not know who was in local command: and a proper appreciation of the situation by divisional headquarters was hindered by General Coke frequently adding to messages from the summit as they passed his own position lower down the hill—the effect of such additions being occasionally to alter the urgency and sometimes even the general impression conveved by the original messages.

Finally, Thorneycroft's notification of his intention to withdraw from the summit was sent by an officer at 10 p.m., but did not arrive till 2 a.m., though the actual distance was about three miles. Another message, sent from lower down the hill at 10.30 p.m., also did not arrive till after 2 a.m., by which time Thorneycroft himself had reached divisional headquarters. Meanwhile, General Warren had sent reinforcing troops up the now empty hill.

Part of this delay in the later deliveries was due to a short move by General Warren's headquarters; but the main cause of the whole disaster was the neglect to arrange an adequate chain of communication, e.g., by helio from Coke's secure position just below the summit, supplemented by relays of runners as an alternative means. It had been obvious from noon at least that messages were unduly late in arrival, and there was ample time then to establish some system. The general attitude towards details of communication is well shown in the relevant paragraph of Roberts' orders for 7th March, 1900: "Lieut.-Col. X will be good enough to arrange that signalling may be carried on throughout the day."

For another aspect of the general question we may turn to a later incident. "Signalling communication was opened on this day with Paget's force . . . until the sun was hidden. Carleton did not wish to involve himself without definite news from Paget, and the failure of

2 lbid. p. 170.

<sup>1</sup> Ibid., Appendix 10.

the sun brought him to a halt . . . Thus it was that his column was of no assistance to Paget."1

Of a more general interest is the use of semi-permanent isolated visual stations on prominent ground features to "pick up" any column or unit within range and relay their messages to other columns or back to the main system. The reappearance of "column warfare" by mechanized troops may result in the reintroduction of a modification of this "area signals," as distinct from the present organization of communication following the normal chain of command.

The Great War, 1914–1918, requires special consideration. Possibly the simplest method of extracting from the mass of material available some of the points more immediately relevant to our subject will be to follow the familiar divisions of trench warfare, semi-mobile, and mobile operations.

From the signal point of view, trench warfare resolved itself into a material struggle between shell-fire and security—the latter term including direct security by means of armoured cable, buried routes, signal dugouts and so on; and indirect security by the use of alternate routes of cable or of alternative means of communication, such as visual, wireless and message-carrying agencies.

Every development of our artillery meant an increase in this material struggle—additional batteries demanding additional lines, while the corresponding additions to the enemy artillery made it almost impossible to maintain even the existing lines. As an example of this material question it may be remembered that for the Cambrai offensive alone over 13,000 miles of wire were laid in a month; and as an example of the phenomenal traffic handled on such lines we have on record that, on the zero day of the Passchendaele offensive, one Divisional Signals handled 1,010 "urgent operations" messages in the twenty-four hours.<sup>2</sup>

But, except for such questions as labour for digging the buried routes, this material problem was purely a technical signal service matter. Parallel to this material struggle, however, was the difficulty of maintaining sufficiently close liaison with staffs of formations and units in such matters as reasonable notice of requirements, and the most economic use of the technical facilities available. "One of the main troubles of the senior signal officer was an absence of full knowledge of the amount of artillery he might expect to come into his area."

<sup>1</sup> Ibid., Vol. III, p. 455.

<sup>&</sup>lt;sup>2</sup> "The Signal Service (France)," pp. 220 and 232.

<sup>&</sup>lt;sup>2</sup> Ibid., p. 176.

Another frequent source of mutual difficulty, and one which we have already noticed at Spion Kop, was the lack of notification as to probable future moves of headquarters—in some cases lack of notification, even after a move! Though in normal times such a procedure meant only extra work and temporary dislocation, in times of stress (such as March, 1918) it had more serious consequences; "the success of the signal communications of different formations varied considerably, and was even more a reflection of the methods of the General Staff than of the efficiency of the signal officer."

On no previous occasion was the effect of staff methods on signals, and of signals on staff methods, more clearly seen. When the corps controlled the routes followed by divisions, the subordinate formations fell back along lines reconstructed and put through for their use. When divisions were allowed to retire at their own sweet will, the signal officer was faced with an impossible problem.<sup>1</sup>;

In the semi-mobile conditions which followed the breaking of the trench barrier in France, the necessity of close co-operation between staff and signals and the need to cut down unessential correspondence was still more emphasized. Also, the long period of immobility had accustomed every one to universal telephone facilities; and even during the 1918 advance one army (which had had little previous experience of moving) allowed 140 subscribers to accumulate on its exchanges, with an average of 20,000 calls a day.<sup>2</sup> But in general a considerable reduction of lines, with a corresponding increase of other means, was achieved. "Forward of Brigade Headquarters visual was useful: forward of Battalion Headquarters it was essential."

In Palestine, lack of stores prevented the development of line communication on the French scale, and this, combined with the open nature of the country, caused more attention to be paid to visual, with some wireless for the higher formations. In fact, the shortage of communication material, not vital in detached desert engagements, was a most important factor in the first "set piece." The following are Colonel Wavell's comments on the first battle of Gaza: "The position of headquarters and the system of command were certainly not ideal. They were dictated mainly by the very limited means of communication available . . . If the G.O.C. had not had to make so prolonged a journey from his headquarters in the morning . . . and had he in the evening been in closer touch with his brigades, the issue of the battle might well have been different." Again: "At this time (6 p.m.) even

<sup>1</sup> Ibid., p. 267.

<sup>&</sup>lt;sup>2</sup> Ibid., p. 309.

<sup>&</sup>lt;sup>8</sup> Ibid., p. 331.

<sup>&</sup>quot;The Palestine Campaigns," p. 75.

the 53rd Divisional Headquarters did not yet know whether the final assault (launched at 4 p.m.) had been successful or not . . . It was not till a little before midnight that an intercepted Turkish W/T message, deciphered in Cairo, reached Dobell: it showed that the Gaza garrison had been indeed beaten, and had intended to surrender if further pressed." Thus the whole battle hinged on the absence of information, based on insufficient provision for communication.

Other "signal" points in the campaign include the use of a deliberately weak wireless cipher, intended to be intercepted and to supply false information; the retention of a W/T set at a position from which the headquarters had moved, for the same purpose; and the final "blow at the brain" by the destruction from the air of the main Turkish exchange at Afule, immediately prior to the cavalry flank movement—so as to paralyse the Turkish system of communication and command.<sup>2</sup>

In Mesopotamia we may notice the moral value of wireless to a besieged garrison (the same thing also occurred on a smaller scale in March, 1918, in France, when some units were cut off by the German infiltration) and the wrong use of wireless with the cavalry, who were ordered to report every hour, though the sets took twenty minutes to erect and to dismantle.

The final evacuation of Gallipoli provides an example of a very difficult movement carried out with great skill; but the part played in this achievement by the technical efficiency and organization of the signal service has received practically no notice. Signals, after all, are chiefly brought into prominence when there is some deviation from perfection of communication; happy is the signal unit that has no "history."

most important factor in the first " are piece." The influxing are

available . . If the G.O.C. had not had to make so prototed a fourney from his headquistions in the morning . . . and had be in the

might well have been different "1

<sup>1</sup> Ibid., p. 78.

<sup>&</sup>lt;sup>3</sup> Ibid., pp. 64, 201, 205.

## THE CLOSE SUPPORT OF INFANTRY

By Major C. T. Beckett, M.C., Royal Artillery

URING the past few years there have appeared in the majority of Service journals articles dealing with the close support of infantry in battle. These have been written from almost every possible viewpoint, and the authors have not scrupled to demand as the salvation of their scheme the maximum benefit which, reasonably or unreasonably, they may expect from the solution which they put forward. The author whose panacea is the mortar demands the highest degree of fire power which has been obtained by any arm of that type up to the present day, while at the same time limiting himself to the lightest form of weapon which a designer has yet conceived. The enthusiast in radio-telephony propounds a solution in which the weight of his equipment will far exceed the weapon which the equipment is designed to connect with the infantry which requires support. The enthusiast for accuracy defends the 3.7-inch howitzer yet fails to take into sufficient account the lack of contact which the use of such a piece appears to make inevitable.

These are but a few of the minor considerations. There are, however, four major considerations which are seldom set down, and whose existence only too often appears to have been ignored altogether. They are primarily business considerations which any great undertaking would have to discuss in detail before spending the large sums of money which the introduction of a new policy or the modification or adaptation of an old policy would demand.

The first of these considerations is the major one of national strategy upon which the organization of the Army in general and in detail must depend. We have to ask first of all for what type of war are preparations necessary? It is evident that the solution of such questions depends primarily on the Cabinet, the Committee of Imperial Defence and the Operations and Staff Duties Branches of the General Staff. There are also, of course, innumerable secondary responsibilities; secondary, not so much by reason of their own unimportance politically or strategically, since no one could deny the importance of our Locarno commitments, but secondary because the likelihood of their occurrence is, we hope, remote as compared with the ever present danger of war

on our Indian frontier. War in Europe and war in the East envisage different enemies, different factors of supply, different terrain and different tactical expedients. Last, but not least, they envisage the employment of artillery on widely different scales. It is essential, however, that in preparing primarily for our major commitments our less insistent demands nearer home shall not be overlooked, and that the greater shall sufficiently include the less. The primary consideration here is that the organization shall be readily adaptable for either eventuality even if a different theatre of war should involve a change of weapon or of organization.

The second factor which is often ignored is the basic principle of mechanization which is equally applicable to industry or to war. In industry, the installation of additional or improved machinery can, as a rule, only be justified if some of the labour employed in the immediate business of production is thereby eliminated. In war, increase of fire power must find its justification in the reduction of personnel within the fire zone, thereby establishing not only a reduction in the cost of the labour of war but also in the vast expense behind the fire zone which goes to maintain, heal and feed the spear-head of an army actually confronting the enemy. War is admittedly unprofitable, but when a whole nation engages in war it assumes the character of an industry, and the reduction of casualties, which can only be produced by the reduction of personnel in the immediate neighbourhood of the enemy, must be a matter of prime policy.

The third of these factors is the incontrovertible principle which recognizes the intimate connection between accuracy, weight of the weapon, weight of the projectile, and its range. It is not possible to go into the innumerable aspects of design which affect fire-power, portability or mobility. They exist, and in so intimate a weapon as the close support weapon they bear an importance out of all proportion to the size and fire-power of the weapon itself. It will be sufficient if the mathematical relation between range, weight, and accuracy is admitted before any demands for the ideal weapon are propounded.

The fourth of these factors is the necessity for a clear and logical statement as to what is meant by close support. A high authority has stated that all artillery is close support artillery, and such a statement is irrefutable. Such close support, however, must be relative to the weapon which is offering assistance, and it is not unreasonable to suggest that close support as popularly understood requires further definition. For the lack of anything better, let us define it as the protection of the intimate interests of the infantry company in the attainment of its immediate objectives.

If the factors which have been enumerated above are clearly borne in mind throughout a discussion of the requirements of organization, of armament and of equipment, it should not be difficult to arrive at some conclusion satisfactory to all concerned.

The next consideration which it is necessary to investigate is the question as to the most pressing requirements now lacking in the arrangements for supporting the company. I will postulate without fear of contradiction that the most pressing requirement is that the assistance should be immediate. This is clear, since under existing circumstances the company commander, faced with opposition which suspends the momentum of his attack, is compelled to demand through an endless hierarchy of authorities the support of a weapon to whose excessive power he attributes its remote and inaccessible position. His chain of communication may be by runner, by telephone or by visual means. Whatever it is, it is subject to interruption, casualty and misconstruction. Communications once established, contact takes time to effect between himself and the individual who controls from afar the fire of his weapon of weight and precision. It is not surprising that under such circumstances the company commander should demand a smaller weapon of less significant fire-power, not requiring for its approach the filter-bed of battalion and brigade, one which he himself can control.

Let us now pass to the source of opposition which is obstructing the company in its advance and whose existence imperils the operation. Offensively the tank is the primary cause of fear. Defensively, it is the machine gun, whose resistance must be overcome.

Colonel Allen, writing in the R.U.S.I. JOURNAL, parodied the artillery practice camp with its flashing machine-guns visible thousands of yards away and deplored the lack of imagination and appreciation of real war which such makeshift representations displayed. There can be few battery commanders who in open warfare have seen machine-guns in action at over 500 yards range. The existence of such obstacles is only appreciated when the fire which they have produced has made their exact location possible. Consequently, to locate and destroy deliberately individual machine-guns is a task which may well be beyond the power of any observer within the zone of that machine-gun and under its immediate attention. The negotiation of such opposition must offer considerable difficulty, and will seldom if ever be possible from the side of the company commander whose attack is held up.

To deal with such opposition, there are available, and experiments have been conducted with, three types of weapon:— (a) the dual purpose weapon; (b) the mortar; (c) the light howitzer.

<sup>&</sup>lt;sup>1</sup> See "None so blind as those that cannot see," R.U.S.I. JOURNAL, November, 1927, p. 778. "The Experimental Battalion," November, 1930, p. 770.

## THE DUAL PURPOSE WEAPON.

Let us dispose of the dual purpose weapon first. About five years ago European armament firms plunged into the production of a number of hermaphrodites which combine on one carriage a high velocity piece of small calibre and a low velocity howitzer capable of high angles of fire. This weapon was to be capable of dealing with the advancing tank or of hurling bombs upon the recalcitrant enemy post. There were, however, difficulties to be faced and no harm can be done by stating them; they are not technical so much as tactical. Tactically such a weapon would seldom be sited suitably to engage both targets. The covered position necessary to engage the enemy defence would be quite unsuitable for the bold and vigorous fire-counter-attack on the advancing body of enemy tanks. A change of position from one suitable for close support to one suitable for anti-tank defence would be hazardous and expensive in the face of the heavy fire with which the tank attack would inevitably be accompanied, while the position on the reverse side of the valley from which the tanks could be engaged would usually be at such a distance, or the slope so difficult to negotiate, as to cause considerable delay in affording the alternative support required.

The gun detachment, wearied after its advance in support of the company or battalion to which it might be attached, on arrival at the position successfully captured by its troops, would not find itself relieved at the same time as the company it had supported in the attack. No longer required for the support of its company, it would inevitably be taken by the higher commander, and grouped either under the battalion or brigade as an anti-tank weapon to fulfil a further role in defence. Human endurance would not for long tolerate such an extended trial and additional personnel would be required. To those who have read and agree with the first paragraphs of this article the objections to the dual purpose weapon are unanswerable. There are other minor objections such as the difficulty of handling the heated barrels when change of role takes place; the chaotic possibilities of ammunition supply, not to mention that the objectives of design are multiple, unequal and opposite. There is no link between anti-tank defence and close support, except the dislike of the troops for both forms of hostile action which call for such reply. Here we may leave the question of anti-tank defence. With the eclipse of the dual purpose weapon it no longer concerns the present discussion.

## THE MORTAR.

The second type, the mortar, at first sight bears every mark of the ideal solution. The mortar is light; it is extremely simple to handle and experience based on the weapon used in the Great War showed that

it was simple to manufacture. The mortar of the Great War cannot, however, fulfil modern demands, and its effective replacement by a similar, though improved, weapon, is not the same simple problem. Nevertheless its use is by no means beyond the least educated of specialists. It is inconspicuous in action and cheap enough to be issued in large numbers.

Its disadvantages are not so apparent. They exist, however. If we admit that the obstacle to be overcome can seldom be seen from a distance of more than 500 yards and if we desire such simplicity of employment that the company commander himself can lie alongside the weapon and supervise the direction of its fire, we are postulating results which contradict the advantages of its employment. The weapon is required because the company commander and his immediate entourage are unable to advance. If they could so expose themselves that they could see to engage the opposition with the mortar, there would be no necessity for the mortar at all. They would no doubt engage the opposition with their own machine-guns and overcome it without the need for interference from heavier weapons. If it is considered desirable to engage the obstacle from further to the rear, then a weapon of some range is required and either means of observation must be provided which are not ordinarily available, or means of communication with the front must be provided so that the observer may see his target. To bring the weapon into sufficient proximity with its target the ground must be favourable. Here again the fact that the infantry are held up would seem to pre-suppose that movement of any kind is impossible. But even supposing that the weapon is already there when the attack is arrested, the question of ammunition supply involves further movement which will be unlikely to escape attention. One is forced to conclude, therefore, that support must be provided from beyond the zone within which the force of the obstacle has created immobility. We are inevitably thrown back at least as far as the first step in the deplorably inefficient chain of communication which causes delay and loss of momentum, and must retain the weapon under battalion control.

There are yet other objections to the mortar. If the mortar is to be light enough to be handled with ease in the zone of the most advanced troops, it will be deficient either in range or in weight of projectile. If defective in range, its support will be limited to the most ephemeral occasions; if in weight of projectile, the support will fall into the category of those which are described as "moral" and in which the results of the explosion will, after a short experience, be as ineffective as were the capers of the jester on the ramparts in reply to a summons to surrender in medieval times. To obtain any sort of fire-effect as apart from moral effect and to make available the immense possibilities

of smoke and gas, a bomb of not less than ten pounds is necessary. To project such a bomb with any degree of accuracy, a highly finished weapon and a finished stream-lined projectile are required. To manufacture such a weapon is by no means simple. The production of a fuze which is cheap and instantaneous and whose factor of safety is adequate for our conditions of service remains a matter of difficulty. When such a weapon is produced its accuracy is still relatively low, and to achieve a definite result a relatively high expenditure of ammunition is required. An appreciable number of men for ammunition portage itself is inevitable. The economies in man-power which should accompany the introduction of increased fire-power soon melt away if they are not even actually increased. The hazards of active service would be considerable.

The last and final disadvantage of the mortar is that it is usually incapable of acting independently of heavier artillery support. Occasions arise when columns are despatched in bush or mountainous country when field artillery, whether horse-drawn or mechanized, cannot accompany the troops and when the mortar alone would be insufficient. It is for such a campaign that the British Army is peculiarly equipped. To arm the infantry with a weapon which, in that type of warfare most ordinarily pursued by the British Army, would require reinforcement by the rival it had displaced, would be uneconomic in the extreme.

### THE LIGHT HOWITZER.

The defects of the light howitzer are many. They are, however, principally defects of communication and organization. The defects inherent in the weapon are firstly its bulk, secondly its method of transport, thirdly the number of personnel required for ammunition supply, and fourthly because it is a comparatively complicated weapon. Its bulk is largely a matter of the aspect from which the weapon is viewed. The weapon is not designed for use in the most advanced infantry fire zone. It is designed to fire from cover to cover and is equipped with means of communication with the forward observer which is, in a sense, the source of its weakness. Its bulk, when on the move, is due to its extemporised methods of draught or to its carriage in pack, and to the multitude of mounted men who must necessarily accompany it for observation and communication. When mechanized, its defects in bulk are reduced and the multitude of horsemen vanish. The number of men required to serve it will diminish considerably and should not exceed those required to serve the mortar. Its first cost is high, very appreciably higher than the cost of the mortar, but, on the other hand, its ammunition requirements, owing to its finer figure of accuracy and the greater weight of its projectile, are less. What money is spent upon the howitzer is saved upon its accessories. The number

of such weapons which are possible with the infantry brigade is lower than the number of mortars that some consider possible. The establishment of personal contact between the company commander and the observer must of necessity be the subject of delay. On the other hand, its ammunition supply in bulk is easier as the fuzed shell is easier to manufacture than the streamline bomb. Its great advantage lies in the fact that it can act unescorted by other artillery in bush or mountain country and so covers both the requirements of divisional artillery and of a close support weapon of the infantry arm.

The virtues and defects of the mortar and light howitzer may therefore be summed up as follows. The apparent mobility of the mortar and its possibilities of forward infiltration are at first sight attractive. They are nevertheless too often illusory in war. The light howitzer makes no claim to forward infiltration but can give support over a very much extended depth. The extent of the support which the mortar can afford in depth is limited by its range, which is limited, in its turn, by its mobility requirements. The actual accompaniment of the company commander, therefore, in either case is impossible, and some delay in replying to his demands is inevitable. The accuracy of the mortar is admittedly less than that of the light howitzer. The mortar, however, is not so specialised a weapon nor does it require artillerymen, foreign to the infantry brigade, to handle it. The cost of the two weapons in battery does not differ appreciably. The advantage of ammunition manufacture lies with the light howitzer. Moreover, the howitzer is likely to be less expensive in casualties. It is capable of fulfilling in any theatre of war the function of a divisional artillery weapon.

Nevertheless, it is apparent that the solution of the problem of immediate response to the demands of the company commander has not yet been achieved by the choice of either weapon, whichever is preferred.

### RADIO-TELEPHONY.

There remains the introduction of radio-telephony. If the prime requirement of close support is immediate response and if the weapon supplied is to be capable, where necessary, of action unsupported by heavier divisional artillery, it is apparent that the more accurate the weapon, the heavier its fire-power and the lower its ammunition requirements, the more effective will be the reply where communications are so effective that the response is immediate. With the help of radio-telephony the light howitzer holds the field. It would seem that the research now being directed towards the replacement of the light howitzer would be better employed if it were directed to the perfection of the lightest and most portable radio-telephony sets for issue to light

artillery. Light batteries would then be expected to despatch with every company an observation party of not more than three individuals who could accompany the company commanders, whose response would be immediate and whose presence would require no constant coming and going of ammunition supply.

If close support is the burning problem which modern tactics would lead us to believe, here then lies the real solution. But investigation must not cease at this point. Close support units must break away from the divisional artillery and must become an integral part of the infantry brigade. It is only when the infantry commander is himself responsible for the well-being and refreshment of his close support units that he will take note of their requirements for rest, and will consider their relief pari passu with those of his own men.

The close support unit might conveniently be grouped with an anti-tank unit and composite formations created, the commander of which would be responsible to the commander of the infantry brigade for anti-tank defence as well as close support. The requirements of close support demand decentralization. The requirements of anti-tank defence demand a most intimate co-ordination. The commander could administer the whole unit but would have his hands free tactically for anti-tank organization. Such a unit within the infantry brigade would consist of two batteries, each of eight guns, one battery for close support and one for anti-tank defence. These batteries might form part of the battalion which some suggest might be formed to contain the brigade machine-guns and these close support weapons.

In view of this tactical decentralization, captains will suffice to command batteries whilst a major can conveniently command the whole. Personnel for anti-tank purposes would no longer be required with battalions. With the increase of responsibility which warrant officers and non-commissioned officers now receive, the number of officers with these units need not be on the scale now considered necessary in batteries of field and medium artillery. There would seem no reason why such an organization should not be economical and why it should not be adapted to whatever purpose the campaign should demand.

The key, however, to the whole question lies in the extended use of radio-telephony. This might even make unnecessary the provision, in European warfare, of any special close support weapon whatever.

# INSTRUCTION BY TALKING FILMS

SWARD DOUBLE FOR FORESTREEN

By Major E. R. Macpherson, O.B.E., F.R.G.S., Royal Army Ordnance Corps.

T may not be generally known that the first real talking picture was shown in Faris in 1892, when Demeny gave a demonstration on his Chronophotophone, which consisted of lantern slides and a cylinder phonograph. Edison followed this up in 1895 with a demonstration of his phonograph and cinematograph working in synchronization, which was exhibited for several months in New York, the listeners using rubber ear tubes. But it was not until 1906 that sound was first recorded on film simultaneously with the picture, and rapid strides were made from this date, especially when the selenium cell was discovered.

The modern sound motion picture as we know it made its first appearance in 1926 in New York, and since that date, progress has been phenomenal. The silent film has practically disappeared, and the technique of the talking film to-day, whilst not perfect, has certainly reached a stage of practical utility. The talking film in its present form represents a combination of numerous discoveries and improvements. In order to create the illusion that sound is emanating from the picture, the speech or music must be a faithful duplicate of the original sounds. This demands a perfection of recording and reproduction that is absolutely bewildering to the lay mind. In recording, the sound waves are picked up by the microphone and are then transmitted through suitable amplifiers to some form of "optical shutter" which controls the intensity of a beam of light falling on the moving strip of sensitized film. Thus we get a photograph of a sound track of variable density or area, according to the sound current. This sound track is then printed on the side of the picture film.

In the case of out-door scenes, sound and picture are usually recorded simultaneously. It is interesting to note that the talking picture has necessitated twenty-four pictures per second being recorded instead of sixteen, and as a result there is now practically no flicker.

In reproduction, just the reverse process is used. The picture film with its sound track is drawn through the projector at the rate of 90 feet (i.e., 1,440 pictures) per minute, and a beam of light is directed through

the sound track, with the result that the former is varied in intensity. In the path of this beam is a photo-electric cell, translating the varying light into electrical energy, which is directed through suitable amplifiers to operate a loud speaker, or speakers, situated at the back of the screen. The latter is usually made of thin rubber and full of minute holes so as to let the sound through.

Good reproduction demands that all frequencies from forty to at least seven thousand cycles should be converted and amplified equally, and the importance of maintaining the loudness constant over the whole range of frequencies cannot be overstressed; if this requirement is not met, linear distortion is introduced, with the result that the reproduced sound loses naturalness.

It is interesting to note that the wide range of frequencies covered by some typical sounds, e.g., the siren of a warship covers approximately a frequency range of 80 cycles; the engine of a fighting plane 250 cycles; an infantry bugle 500 cycles; and the human voice 1,000 cycles.

The educational value of films is well established, but the potentialities of the new technique as a practical form of training in all three Services have yet to be realised. Let us first consider educational establishments. As is well known, really good lecturers are not abundant, and not every instructor can lecture. It is suggested, therefore, that a talking film should be made under carefully prepared conditions of every important lecture given by a first-class lecturer. This will mean that there is a permanent record which can be reproduced at any time, while the lecturer is released for other relatively more important duties, such as research work, private study, or the composition of new lectures. Such a film could be repeated to at least six or eight different audiences in rotation during a normal working day, even if only one reproducing equipment be utilized; such a feat could not possibly be performed by any one lecturer. The importance of this will be exemplified later on. If the lecture is on a scientific subject involving prolonged experiments which could not possibly be performed during the space of a normal lecture, it is a perfectly simple matter to take silent records of the experiments beforehand, even if they are spread over weeks or months; and then the whole can be presented with the sound lecture superimposed on the picture events-an inestimable advantage for instructional purposes.

The following are only a few examples of many hundreds of talking films which could be devised with a little ingenuity: lectures and demonstrations referring to all forms of fighting weapons, with close-up views of working parts which would be visible to the whole class, instead of only to two or three in the front row, as is usually the case when the real article is being explained—this would specially

apply in the case of instruction in such technical subjects as the machine gun, breech mechanisms or the internal parts of a torpedo. Added interest could be given by introducing views of the parts being manufactured. Cartoon photography could be resorted to in order to illustrate some complicated mechanical operation such as the action of gyroscopic control, the function of carburation, or the aerodynamic forces in a wind tunnel. During the whole of these demonstrations the lecturer's voice would be clearly audible to every student.

Again, in the training of air pilots, it would be of inestimable value to be able to demonstrate the sound of a sweet running engine, followed by a series of prepared faults, with their appropriate remedial measures. The same might be said of tank engines, and in fact of any form of internal combustion engine.

Most forms of naval, military or air exercises could be depicted on the screen, with their appropriate talk and sounds. The various phases of engineering instruction could be dealt with by supplementing the films with cartoon shots to illustrate any intricate point. The system could also be employed to explain any complicated list of changes to a technical vehicle, machine, etc.; this would be of great value, especially abroad, to those having to carry out this class of work. The talking film might also be used to record ceremonial and barrack drill, with the correct words of command. Incidentally, it should be noted that sound can easily to added to existing silent films.

There is a most interesting collateral development to this new technique, and that is the projection of speech or music through special amplifiers over considerable distances. Articulate speech can now be heard at distances of well over a mile. Special use might be made of this apparatus during a field exercise, when it might be desirable to address a large number of men. A speech-amplifying unit for work of this class could be transported in a medium six-wheeled lorry.

Up to the present, a certain amount of silent film work for training has been done in all three Services, and many excellent silent films have been prepared by individual departments; but the whole thing is, so far, on an entirely parochial basis, and no organization exists by which the films prepared by one Service can be utilized by another, although there must be many subjects of common interest. In the Army, silent film work to-day is carried out by the Royal Army Ordnance Corps under the control of the Director of Military Training. The former were pioneers in this class of work, which was commenced shortly after the war. A careful survey of the whole situation suggests, however, that centralization of control is most desirable, but, failing that, some form

of co-operation between the three Services is absolutely necessary if the talking film is to be successfully applied to their training.

Costs of equipment are fairly high, but any scheme should, as far as possible, be self-supporting, and not a burden on the State. This can only be done by all three Services pooling their common resources and developing a Central School for instructing operators, mechanics, etc., and preparing the necessary films. So far as personnel is concerned, any trained man with a knowledge of wireless telegraphy can be made proficient in the technique of talking films in less than a month. As regards equipment, all Service theatres in naval ports and in garrison towns should have a good standard British outfit; the same applies to all sea-going ships with large complements and the necessary facilities. At the present moment, the silent film in the average military theatre is a dismal failure. This is mainly due to the decentralised system of procuring films, which means that only those of a mediocre nature are obtained, while the supply of silent films is becoming more and more restricted. A Central School of Instruction, in addition to making instructional films, could obtain the finest talking films from the trade at commercial rates. This would enable popular prices to be charged for the latter, and a steady income from the gates could be relied upon, a vitally important point.

In addition to the equipments suggested above, one or two portable recording equipments would be necessary to supplement the fixed recording equipment at the Central School of Instruction. This establishment would, of course, possess a suitable studio, etc. About six or eight portable reproducing equipments might be used to give demonstrations in the open to troops in training or wherever else required. These could also be used for entertainment purposes.

The capital expenditure on equipment for a scheme of this magnitude, embracing both training and recreation, might reasonably be financed by the Navy, Army and Air Force Institutes, whose profits accrue from all three Services. The writer is absolutely convinced that the regular income derived from the gates would repay this capital expenditure within five or six years, which is admittedly a business proposition.

All the necessary personnel would be recruited from picked men of the technical branches of the three Services; the existing silent film staff would, of course, form the nucleus of the new organization. Naturally the most experienced would be placed in technical and administrative control.

The ultimate object of the scheme is increased economy and greater efficiency in the training of the armed forces of the Crown. The permanent staffs of many training establishments could be reduced,

when the necessary training films have been made, and once the scheme became self supporting, there should be an appreciable reduction in expenditure on training in all the Services. By substituting a good cinematograph, practical demonstrations in the running of vehicles, engines, machinery, etc., could be reduced by fifty per cent.—resulting in a considerable saving in overhead expenses, depreciation, etc. The number of lectures or demonstrations given in any training establishment during a fixed period could be greatly increased; this means that more courses could be held in the year, which would mean a higher state of efficiency in the arm concerned, to say nothing of the conservation of the human machine.

On the outbreak of war, when the fighting Services might be flooded with a mass of raw material to train in a limited time, the value of the robot instructor would be incalculable. This especially applies to the Royal Air Force, whose wastage in trained personnel will probably be higher than in the other Services. Portable equipments might form part of an expeditionary force, to assist in the work of Base Training establishments, thereby releasing valuable trained personnel for more active duties.

In conclusion, it is interesting to note that the United States naval and military authorities have realised the importance of this new factor in training, and are exploiting every phase of it, both ashore and afloat. No less than 270 reproducing equipments for training and recreation purposes have been installed in the United States navy alone. The Chief Signal Officer of the United States army controls the talking film equipments of that Service, and they will eventually be extended to the sixty army posts throughout the States, and later on to the Colonies.

The United States are the pioneers in this new and wonderful form of instruction and education in the Services, and it behoves us not to lag behind. Our small voluntary forces with a wide-flung Empire to protect, demand the very highest technique in training; yet, to-day, economy is all important. We might be well advised to remember Lord Cardwell's great principle which he enunciated whilst at the War Office: the importance of the union of administration and finance. Here is a means of giving practical effect to that principle, which is even more important to-day than it was sixty years ago.

Historique" of the General Staff, by the Lawquare of Visitina, and by

Cown Prince's Army, into

<sup>&</sup>lt;sup>1</sup> Last year Congress voted the money for talking films to be installed in approximately 200 vessels of the U.S. navy by 1st January, 1931. Contracts were made with twelve firms for the supply of these films at the same cost as the original silent pictures.—Editor.

# VERDUN AND SOMME

By BRIGADIER-GENERAL SIR J. E. EDMONDS, C.B., C.M.G.

- "La Bataille de Verdun." par M. le Maréchal Pétain (Paris, Payot 15 francs).
- "Verdun." By Marshal Pétain (Elkin, Matthews & Marrot, 12s. 6d.). (Translation of above).
- "Verdun, 1916." By H. Wendt. (Berlin, Mittler, 7 marks).

HERE is already an immense literature on the subject of Verdun. It has a catalogue of its own in "La littérature inspirée par Verdun," by MM. Liénard and Frémont. In practically all the books of this great collection, however, the struggle at Verdun is treated as a thing apart. General Palat in his great history of the War certainly ended his Volume VIII, "La ruée sur Verdun," at the date of 30th June, 1916, and dealt with the remainder of the fighting round the fortress in his Volume IX, "La Bataille de la Somme." But it has been left to Maréchal Pétain to say, with his usual decisive brevity, "La Somme a dégagé et sauvé Verdun."

His book, "La Bataille de Verdun," of which an English translation is available, originally appeared serially in "L'Illustration." It is a popular account of the great struggle, and its main purpose would seem to be the removal from the minds of the French electorate, in view of the money being, and to be, expended on frontier defences, of any idea that the French permanent fortifications existing in 1914 were useless. He devotes the final pages of his book to this subject, and sums up, "permanent fortification fulfilled its role; it stood up ready to make its action effectively felt when all around it crumbled." This Parliamentary occasion has fortunately resulted in a book which, although not meticulously correct history, will be found valuable as an easily read introduction to the study of the Verdun literature.

Herr Wendt's book is of a totally different character. It is a laborious compilation, based not only on the Verdun literature, which includes the German official monograph, called "Die Tragödie von Verdun," but on the documents of German O.H.L. and of the Fifth (German Crown Prince's) Army, information supplied by the French "Service Historique" of the General Staff, by the Governor of Verdun, and by

German participants, notably letters of Lieut.-General Tappen, Chief of the Operations Section of O.H.L. in 1916. The sub-title of the book is "The Falkenhayn Attacks in the Meuse Area in the Direction of Verdun as a Strategic Problem." But again the author seems to have a special, unmentioned, purpose. Herr Wendt certainly discusses Falkenhayn's strategy, but his real purpose seems to be the whitewashing of the Crown Prince. We learn right at the outset that it was only the retirement of Kluck and Bülow at the Marne which prevented "the well deserved prize of Victory, the fortress of Verdun, which was in sight," from falling into the Crown Prince's hands, and "it was no fault of his that it was lost." The Crown Prince (or his Staff Officer, Schmidt von Knobelsdorff, for him perhaps) is exhibited as having a very clear idea of how to take Verdun—by pinching it out by attacks on either side, near to it or not quite near, according to the troops available.

The special purposes of the two authors have, however, condensed into convenient form nearly all that the British military student will desire to know about Verdun, whose real strength was due to its permanent works being near the front trench line. What happened is well known. On 21st February, 1916, the Germans attacked the fortress on the right (East) bank of the Meuse on only a six-division front. They gained a considerable amount of ground, but did not break through. General Joffre had neglected the defences of Verdun, had even withdrawn many of its guns, and did not expect an attack there. It was mainly because the weather prevented the Germans from attacking a week earlier that he was able to make up his mind in time, and only just in time, to reinforce the defenders with two divisions and brought up within reach two of his best corps. The Germans widened their offensive by attacking on the left bank of the Meuse (Mort Homme and Hill 304), and by repeated attacks gradually gained more ground on the right bank until, on 23rd June, they were close under Fort Souville in the inner line of forts, and only three miles from the centre of Verdun. Then, on 24th June, came the first day of the bombardment at the Somme, and Falkenhayn telegraphed to the Crown Prince that "the general situation urgently demands the limitation of the expenditure of men, material and munitions." On 1st July the infantry battle at the Somme began "with not unimportant initial successes, and now one instruction followed close on the heels of another from the Supreme Command. Reserves must be handed over. Heavy batteries were withdrawn from the attacking Army before Verdun. Most of all, the greatest economy of the precious ammunition was made an urgent duty."1 There were no more German attacks at Verdun, except a

<sup>&</sup>lt;sup>1</sup> German Official Monograph,

tiny one on 10th July, after ten days of bad weather, and this broke down under "fearful enemy artillery fire." The gain looks large on the map: but it was the high watermark of only "a small party not more than a platoon in strength." Next day Falkenhayn arrived and, on hearing the result, ordered "the strict defensive and the further giving up of numerous foot artillery battalions for the Somme." The battle, as Herr Wendt admits, had become "The Tragedy of Verdun" to the Germans, and the "Gloire de Verdun" to the French, while the Somme attacks were now "bleeding white" the Germans, an effect which Falkenhayn says he had intended his Verdun offensive to have on the French. The result was that our Allies were able, in the course of the next four months, gradually to regain most of the ground they had lost

A most interesting feature of Herr Wendt's book is the table, prepared from the official records of both belligerents of the losses at Verdun. They are practically the same: in round figures 362,000 French (205,000 wounded), and 336,000 Germans (wounded not given). This goes far to prove the theory, so often ridiculed by civilians, that the opponents being equally matched (ebenbürtig) the defensive is more costly than the offensive, is fully borne out. Month by month, from February to July, the French losses were greater than the Germans, with totals of 288,000 to 210,000. Then in August the tide turned and the French, who were attacking in the next five months, lost less than the Germans, 74,000 as against 87,000.

We at last know for certain that the German losses in ten months of Verdun pale besides those at the Somme, when in five months the casualties were over 430,000 (more than the British, which were 412,000, with many more wounded counted: probably a total of 350,000 casualties by German accounting methods), of which 306,000 occurred in July, August and September.

What was really the intention of the Germans in attacking at Verdun?

M. le Maréchal believes that Falkenhayn :--

"When he fixed on Verdun had in mind actually a mighty effort . . . that he hoped to open an immense breach in our lines: and that, in taking full advantage of a success of this nature against a French Army cut into two separate sections, the Imperial Armies would have every prospect of pushing on to a brilliant victory . . . Catch us as in a vast net, resembling a second Sedan."

Falkenhayn, in his "General Headquarters, 1914-16, and its Critical Decisions," has printed at length the memoir, which he says was written at Christmas, 1915, to serve as a basis for a report to H.M. The Kaiser. After emphasizing that England was Germany's "arch-enemy," with

an "enormous hold over her Allies," Falkenhayn declared that, from lack of adequate means, an attack on the English front could not be undertaken: on the other hand, the strain on France, "England's best second...had almost reached breaking-point," and she could be attacked with "limited forces," for "there are objectives for the retention of which the French General Staff would be compelled to throw in every man they had. If they do so the forces of France will bleed to death... If they do not do so, and we reach our objectives, the moral effect in France will be enormous."

The choice, he considered, lay between Belfort and Verdun; but a glance at a map will show that the shape of the front near the latter—the fortress being at the bottom of an enormous pocket in the enemy's line, 30 miles deep and 30 miles across—was far more favourable; for both flanks of an attack would be secure. Belfort was merely part of a straight front. Besides, Verdun was central, whilst Belfort was on the extreme flank, a long way to send reinforcements and the great heavy artillery train and siege apparatus, and too distant to withdraw them quickly if an emergency arose as it did on the Somme.

Falkenhayn, bearing in mind his new strategy of "bleeding white" the enemy, sanctioned an attack on Verdun on the right bank only, and provided only six divisions with a great mass of artillery to make it, and fed the attack parsimoniously with a division at a time—but kept the divisions in the line up to strength with reinforcements, leaving them in for long periods. In March he sanctioned an attack on the left bank, but, only, we are told, because the French guns on that side enfiladed the German advance on the right bank; it was not pursued very far.

From first to last the Crown Prince and Falkenhayn had different objects, and the Fifth Army did not play the game which the C.G S. desired, so much so that he at one time thought of stopping the operation because the Prince "had bitten in too far."

We venture to think that Falkenhayn's aim was not quite as he has represented. France he thought was "near breaking point," and a powerful political party in the country, supported by German propaganda and money, was desirous as a party to move for peace at any price. What Falkenhayn hoped was that a success of the Germans near a famous fortress like Verdun—he said the choice lay between Verdun and Belfort—would bring matters to a head in France, and put a defaitist Government into power.

Those more difficult of attainment receive a points, others x, while an extra 2 points, as shown at tomain it also e, are given to those who pass in all events. Suggested times or distances and the points to be awarded for passing in each are as follows: - more contained to passing in each are as follows: - more contained to the points of the points

# ATHLETIC TESTS IN A BATTALION

By CAPTAIN G. M. GAMBLE, The Sherwood Foresters.

T is a generally accepted fact that "regimental sports," particularly those of an infantry battalion, are an irksome social event, relieved to some small extent by a good tea, good music and the annual laugh attendant upon the officers' race. Nevertheless this form of competition is, in its way, excellent, and certainly must form part of the athletic training of a battalion. There is, however, another side to the "sports" question not generally practised but worthy of consideration by all who have the fitness and athletic training of their unit at heart.

This is the organization of an inter-company, etc., competition in which every man of the company is concerned, and which takes place, not before a glittering throng of polite guests, but from day to day throughout the year. In this competition failure by an individual to attain a reasonable standard drags down his company's chance of success, just as much as another man's facile qualification elevates it.

Briefly the system is as follows:--

A book is kept in which the names of every officer, warrant officer, N.C.O. and man of the battalion are entered by the officer in charge of athletics, and in this are entered the results of the various tests through which each individual is put. This book is ruled into columns, showing:—

(1) Army Number; (2) Rank; (3) Name; (4) 100 yards; (5) 440 yards; (6) 1 mile; (7) ½-mile fighting order; (8) High Jump; (9) Long Jump; (10) Cross-Country; (11) Extra 2 points; (12) Total; (13) Remarks.

Standard times or distances are set for each event according to the standard of physical fitness and training of the unit, and points are allotted to individuals as they pass the various tests.

Those more difficult of attainment receive 2 points, others 1, while an extra 2 points, as shown in Column 11 above, are given to those who pass in all events. Suggested times or distances and the points to be awarded for passing in each are as follows:—

receive to be	Event	given			Standard	Points Given
100 Yards	limita . In la	VI IIE	1,11	. Flire,	13 sec.	men a <b>r</b> ove a c
440 Yards	numer Irail		200	out the	70 sec.	below That age
I Mile	meg mori	7712		elation	61 min.	2
1-Mile in fig	hting orde	r with	rifle	0.00	4 min.	2 10 101
High Jump	10 4 - 100			4.7	4 ft.	P. I. or ore
Long Jump				00 **00	13 ft. 6 in.	heren Id Ilia
4 Mile Cross						2

The company having the highest average at the end of the year wins the challenge cup.

The following instructions have been found satisfactory in running the tests:—

(1) A man counts for the company with which he is serving on the 31st December in each year or, if he is transferred from the battalion during the year, having served three months with a company, for the last company with which he served for three months.

(2) When inter-company transfers take place the officer in charge of athletics forwards a return to the man's new company, showing points obtained in tests and in which events.

(3) The highest possible number of points obtainable during the year by each man is 12, except in cases where a man is not present at a time when he can compete in the cross-country run. In cases of this description the highest possible score would be 8, i.e. 12 minus 4. Minus 2 as he could not compete in the cross-country run, and minus 2 as he could not compete in every event.

(4) The total number of points obtainable by a company are worked out, and the percentage of this that the actual number of points obtained make, is considered to be the company's "figure of merit" for the year.

An example of the calculation necessary to arrive at the figure of merit is as follows:—

Percentage = 
$$\frac{1,092 \times 100}{1,488} = 73.39\%$$

Exemptions must, of course, be given in the case of officers and men above a certain age. This, it is suggested, should be 35. Anyone below that age, unless he can produce a medical certificate showing that, for some reason, he is definitely debarred from competing, must count for or against his company according to results obtained.

Proper organization of a systematic method of running the tests will be found to repay those concerned enormously, and will result in great saving of time. A few suggestions may be of assistance.

The running track, with the long and high jump pits inside it, should be so arranged that the winning post for all track events is at one spot, near which one of the recording officers (from another company than that competing) has his table.

When races are run the tape at the winning post is held aloft by an officer and an assistant at arm's length. It is held so by the officer with a stop-watch in his hand, and as the standard time expires he shouts "Down," and the tape is brought smartly down to the level of the chest. Only those men who are past the tape qualify.

In the long jump two pegs are driven into the ground, one on each side of the pit, 13 ft. 6 in. in front of the "take-off" board. The recording officer can then see at a glance, in most cases, whether jumpers have qualified, and, in cases of doubt, a lath laid across the pit quickly decides the point.

It has been found that a good time at which to work off most of the tests is during the period that companies are "struck off" for musketry, as many men are then available without necessitating the correspondence and dislocation of duties usually caused by calling in regimental and extra-regimental employ to compete.

Many commanding officers, if approached with the suggestion that tests on these lines should be instituted in the battalions under their command, would probably say that the battalion had quite sufficient to do already without adding anything new. In these days of intensive training of a "perfect pocket army" there is much to be said for this point of view. It is urged, however, that the amount of time required for the tests being small, and that the benefit to the battalion of getting every man, from the last joined recruit to somewhat sedate and sometimes obese people like the cook sergeant, the pioneer sergeant and the orderly room staff "on their toes" and imbued with the "will to win" is so great, the trouble taken is well repaid.

1,092 × 100 1,488

race of competing in the enough

Altestola po<del>stando de fetera</del> (1) + (6 × 6) — 1.45 Actual points obtained — 1, 1 m - 1, 2 m

# MARTIAL LAW

By PHILIP A. LANDON, M.A., M.C.

The Law of Martial Rule. By Charles Fairman. Callaghan & Co. Chicago; 1930.

ARTIAL Law is a subject which the soldier is wont to avoid as being too reminiscent of the examination paper. But this legal text-book should appeal to the military reader, because it contains an up-to-date and complete summary of those aspects of Martial Law, which affect the soldier and the politician, as well as the lawyer. It is true that there has been no occasion upon which Martial Law has been resorted to in this country since the Civil War, but the Army has been called upon to exercise it both in South Africa and in Ireland since the beginning of the present century, and, from a constitutional point of view, it is an ever-present safeguard of the welfare and peace of the community against elements of disorder.

The chief interest of an American work on the subject lies in the fact that the Executive in the United States, more independent of the Legislature and of the Trade Union than our own, has more or less constantly had recourse to a declaration of Martial Law in dealing with industrial disputes in cases where, in this country, with its more placid or less robust population,—the reader may select whichever epither he prefers,-no constitutional crisis would have arisen. "Martial Law," says Mr. Fairman, speaking of industrial strife in America during the last forty years, "has been proclaimed on so many occasions as to have become a household word." Yet, during the general strike of 1926, we, in Great Britain, passed through a far worse ordeal than America has ever experienced, without any responsible person, so far as we know, even suggesting that a state-of Martial Law had arisen. In our democracy, the people prefer to act through their legislature rather than through their executive: it was our Parliament that placed on the statute-book the Emergency Powers Act, 1920, and the Trade Disputes Act, 1927. We prefer to be ruled by law rather than by force, whether the force be employed by the Government or by the Trade Union leaders. We prefer the court of justice alike to the soldier's rifle and to the wastrel's brickbat. Our peculiar national sentiment in this

respect was reflected, it would seem, in the attitude of the country as a whole during the general strike and in the subsequent legislative provisions contained in the 1927 Act. At any rate, a perusal of the chapters in Mr. Fairman's work, in which he contrasts the use of Martial Law in England and in America, suggests that any proposed legalization of the general strike would bring us dangerously near the American standpoint, in which the likelihood of a declaration of Martial Law by the Government is a constant menace to the ordinary peaceful citizen.

So much for the political interest of the work. The soldier will be especially interested, of course, in the American view as to the powers of the commander under a regime of Martial Law and as to the liabilities of subordinates for acts done in enforcing it. Both points are adequately dealt with by Mr. Fairman, although he does not seem to have had access to the report of Mr. Justice McCardie on the Amritsar affair, in which the law was found to be more on the side of the soldier than of the politician. We agree with the statement (p. 227) that the commander is not to be held liable merely because "he might more wisely have taken some other course." He is immune if the course which he did take "was reasonably related to the fulfilment of his duties." As regards officers and the rank and file, whose dilemma is "probably more fancied than real" (p. 238), Mr. Fairman rightly says that, in practice the difficulty never arises, as Indemnity Acts are passed as a matter of course, not "improvidently" passed, as he suggests, however, for Parliament, in indemnifying the man who has only done his duty, only obeyed his orders, is surely the vehicle of public opinion, which, in this country, at any rate, has an immense respect for the individual soldier or sailor who unhesitatingly follows where duty calls him.

The more legally minded readers will be impressed, not only by the exhaustive bibliography, in which the only omission we note is a reference to the lucid summary in Keir and Lawson's "Leading Cases in Constitutional Law," but also by the very full excerpts from Irish and South African, as well as American, cases. This work is unquestionably the most up-to-date book on the whole subject. On some contentious points of law, as is only natural, one will differ from Mr. Fairman's views. Thus he ventures to say that the decision in Ex parte Marais, that where actual war rages, the acts of the military authorities are not justiciable in the ordinary tribunals, is still open to question. Few will agree with this. And it is hardly fair to suggest that the Privy Council (which included, besides Lord Halsbury, Lords Macnaghten, Davey, Shand, Robertson and Lindley, and de Villiers, C.J.) did not make a "sufficient examination" of the petitioner's case, especially as it was argued by Mr. Haldane (as he then was) at the height of his forensic powers.

Ex parte Marais remains, we think, the constitutional charter of our extra-constitutional Martial Law.

Mr. Fairman's work has made us think deeply; and the more we have thought, the more convinced we are that the rules of Martial Law, as they stand on the English precedents to-day, are the happy outcome of the union of military and legal minds, working in complete independence of the politician. They represent the fulfilment of the aspiration, so well expressed by Lord Haldane, himself a lawyer who understood the soldier, which is quoted by Mr. Fairman at the head of his concluding chapter: "We want the Army to be a popular institution, and not a menace to civil liberty."

medicated and consistency of flowers on the plan of strends and innocurrent upon a confine strends as a specialistic or property and the strends are specially as a special strends and the strends are specially as a special strends and the strends are specially as a special strends are specially as a special strends and the strends are specially as a special strend

makes the first thirt where it was a state of the green and with a state of the

an form a free last being of the collection of the contract of the contract of

Poland and the little lintente as defenders of the status que, while to

I'v hart. Marsis remains, we think, the resultational charm of

extra-constitutional Marrial Law.

# THE INTERNATIONAL SITUATION

### 

By Major E. W. Polson Newman, B.A., F.R.G.S.

THE actions and reactions of three main factors have created a most disturbed political atmosphere in Europe to-day. This has been accentuated by the varying strength of the armed forces, maintained by one group of Powers on the plea of security and imposed upon another group as a precautionary measure; also by the general economic depression. The first factor is represented by a group comprising most of the former Entente Powers, together with certain nations which obtained their independence at the Peace Conference, some of the latter having previously formed part of the Austro-Hungarian Monarchy. Under this heading come France, Belgium, Poland, and the Little Entente (Czechoslovakia, Rumania and Yugoslavia). As most of these countries have considerably benefited territorially or otherwise as a result of the War, their interests lie in the maintainance of the status quo of the Treaties of Versailles, St. Germain and Trianon, and therefore in the preservation of peace. The second factor comprises those nations which lost territory as the result of the War, or who did not consider themselves fairly treated at the Peace Conference; they are represented by Germany, Austria, Hungary and Bulgaria, and, in the second category, Italy. All these Powers are naturally in favour of Treaty revision in some form, and to most of them the preservation of peace is an imposed necessity rather than a national interest. The third factor consists of Soviet Russia, whose Bolshevist influence affects nearly every country in Europe, and whose internal difficulties may lead to even more comprehensive groupings among the more or less discontented nations. As far as Greece and Turkey are concerned, their policies are so uncertain that it seems better to exclude them from this review.

Hence, it looks as if Europe may again be confronted with division into two opposing camps, namely, the discontented nations of Germany, Italy, Hungary, and possibly Austria and Bulgaria, vis-à-vis France, Poland and the Little Entente as defenders of the status quo, while the divergence of these two groups may well be intensified by Franco-Italian differences and the struggle of these two Powers for political hegemony in the Balkans. The question of the status quo, which may be regarded

as the most important issue in Europe to-day, will have to be decided sooner or later, and on its result the future of Europe will depend. Russia may play an important part in the decision of this issue. It is impossible any longer to remain blind to the fact that, sooner or later, Russia will recover her former position as a great European Power, and that pressure from that quarter will become a significant force with which to reckon. There have already been indications of a tendency for Germany and Russia to co-operate, chiefly owing to the Polish question, and Italy has recently shown inclinations to start a political flirtation with Moscow. It is, therefore, possible that a situation may arise where Russia may enable the dissatisfied States to force the issue of Treaty revision. Hence we should be prepared to face in the future a possible situation arising out of a Russian policy to exploit discontent in Europe with, as its counterpart, a desire among the discontented nations to make use of the situation in Russia for the furtherance of their own ends.

The peace of Europe does not depend on the small States of the Danubian or Balkan areas, but on the Great Powers and their influence in these smaller States. Serbia did not cause the Great War, nor will the responsibility of any future war on a great scale lie with countries such as Hungary, Rumania or Czechoslovakia; but the conditions prevailing in those countries can be exploited by the greater Powers for good or evil. The Little Entente States contain within their frontiers powerful forces racially forming part of, and to a large extent contiguous to, a highly dissatisfied neighbour, and constituting a grave source of weakness to these states. Hungary, the home of these forces, is in sympathy and friendship with a progressive and over-populated Italy pressing for expansion and looking for an opportunity to improve her position; while the Hungarians have also been looking round for other European forces to which to attach their claims for Treaty revision. It is here that the Central European question, pivoted on the present distribution of the Hungarian people, has a direct and serious effect on the gravity of the question of the Polish Corridor, which is admitted by the highest European authorities to be the most dangerous menace to the peace of Europe. In Budapest I was recently informed that Hungary was inclined to look to Germany's opening of the Corridor question as the best opportunity for putting forward her claims, and a few weeks later events in Germany tended to show that the younger generation means business in its determination eventually to upset the status quo of Versailles.

Whatever one's views may be in this matter, it is difficult to visualize coming generations of young Germans continuing the payment of huge sums in reparations, thereby crippling the efforts of those who never knew the Great War; and it is equally difficult to see the German nation, restored to its normal position in Europe, continuing to tolerate the settlement by which the Reich has been divided into two parts. Obviously, the Hungarians, divided and reduced to practical impotence by the Treaty of Trianon, cannot hope to obtain redress by singlehanded action, but events are gradually developing which point to the fact that Hungary's future interests lie in the direction of Berlin in the North and Rome in the South. On the other hand, the maintenance of the status quo is a fundamental precept of French policy, and consequently the Little Entente States enjoy the full friendship and support of France, as well as the more indirect support of a strong and progressive Poland supremely interested in the preservation of newly-acquired territory. There is, therefore, a distinct tendency in Europe to-day towards the formation of a block of States stretching from the Baltic to the Mediterranean in favour of Treaty revision, flanked on either side by two parts of another group strongly supporting the status quo.

The chief clashes of interest are between Germany and Poland over the Polish Corridor; Italy on the one hand and France and Yugoslavia on the other in the Adriatic; Hungary on the one hand and Czechoslovakia, Yugoslavia and Rumania on the other on the question of frontiers in Central Europe. Hence it seems probable that in the event of hostilities on a great scale Germany would be opposed by France and Poland; Italy by France and Yugoslavia; and Hungary, possibly with the help of Bulgaria, by Yugoslavia, Czechoslovakia and Rumania. Europe would be divided into two distinct theatres of war; the western theatre, where Germany, Italy, and possibly Austria, would meet France and Belgium; and the eastern theatre, where they would meet Czechoslovakia, Poland and Yugoslavia, Hungary forming an important salient into the position of the Little Entente. Strategically, the Treaty revision Powers would occupy generally a position of interior lines, while the status quo Powers would be situated on exterior lines. But were Russia to throw in her lot with the former group of Powers, the relative strategical positions of the respective groups would become very complex. It is, however, possible to picture in a general way the possible groupments of these Powers in the event of general hostilities including Russia. Germany would be operating on interior lines with regard to France and Poland, while Poland would be operating on interior lines with regard to Germany and Russia, and would probably be assisted by Estonia, Latvia and Rumania as far as Russia was concerned. Italy, on the other hand, would be operating on interior lines with regard to France and Yugoslavia, while she would have to support her ally Hungary in her struggle with the surrounding Powers of the Little Entente. At the same time, Yugoslavia would probably find herself involved in

difficulties with Bulgaria; the intervention of Russia would probably hold the entire Rumanian army; and Czechoslovakia, Yugoslavia and Rumania would probably have to face serious internal troubles and military disaffection owing to large hostile minorities within their frontiers. Hungary's position would, therefore, be less precarious than appears at first sight.

Although such a situation is very largely speculative and could in any case only apply to the opening phases of operations, it gives some idea of the direction of military pressure and provides some basis for further investigation. When, however, we come to examine the war strengths of the respective armies, we are faced with a problem in which guesswork must play a very important part. But there are certain facts which are useful to bear in mind, and certain assumptions which one is almost justified in making. First, Germany is officially restricted to an army of 100,000 men of all ranks by the Treaty of Versailles, and no military aircraft are permitted to her. Although she possesses Reichswehr troops, police and other forces, has a large fleet of civilian aircraft, and possibly an unimportant quantity of hidden arms, the country is practically disarmed, and it would need about six months liberation from these restrictions before she could put an army of any appreciable dimensions in the field complete with the necessary materiel. At present Germany is not in a position to undertake field operations on any large scale.

Austria is restricted to an army of 30,000 men all ranks by the Treaty of St. Germain, with a restriction similar to Germany as regards military aircraft, and it is at present doubtful whether an army of this strength could take the field at comparatively short notice, even with the help of some of the political armed forces of the country. As regards small arms, the Austrians are fairly well equipped, owing to the large number of shooting clubs in the country.

Hungary is limited to an army of 35,000 men all ranks by the Treaty of Trianon, with the same aircraft prohibition, and is in much the same position as Austria with the exception that the quality of the personnel is probably higher. It must also be remembered that Hungary is in a very vulnerable position, owing to her great plains and lack of aircraft, the proximity of Budapest to the Czech frontier, and the predominance of agriculture over industry. Bulgaria is limited to 20,000 men all ranks, with a gendarmerie of 10,000 and a frontier guard of 3,000, by the Treaty of Neuilly; but the Bulgars are a fighting race and could probably put in the field, with outside help, a fairly formidable force for its size.

Italy, on the other hand, can probably mobilize ten per cent. of her population, including all categories of men and youths trained to bear

arms. The quality of Italian troops varies greatly, but on the whole they must be regarded as inferior to the average French standard.

On the side of the status quo Powers, it has been estimated by Mr. Lloyd George that France, Poland and Czechoslovakia alone could produce a combined force of 8,000,000 trained and fully armed men at a week's notice. It is also significant that, while in France, Poland, and the Little Entente States fresh reserves are daily filling up the war reservoir, in Germany, Austria and Hungary they are merely the remnants of the men trained before and during the War who are gradually dying out, and those who remain are yearly becoming less fit for war service. While France has an army greater than she has ever had before, the majority of which is at present in civilian clothes, Germany could only equip a force much on the same lines as that of Belgium. The position of Italy as regards reserves is much on the same lines as that of France, although the difference in quality must be taken into account.

With regard to Russia, it is exceedingly difficult to say anything with any feeling of certainty, except to emphasize the important point that Russia can no longer be regarded as a country immune from invasion and subsequent defeat. Russia contains certain vulnerable strategical points, the destruction of which would cripple the unwieldy military mechanism of this vast area.

As the basis of all problematical estimates on the war strengths of the various nations must rest on the statistics of male populations by age groups, the accompanying table, taken from the Armaments Year Book, 1930, published by the League of Nations, is appended:—

flage days	- Unit		POPULA Age Grou		n.in/		Total
		(0	Total	Male			
	 15-19	20-24	25-29	30-39	40-49	15-49	population
Austria	 325	275	228	435	394	1,657	3,077
Bulgaria	 270	213	165	289	203	1,140	2,421
Germany	 3,285	3,065	2,468	3,992	3,713	16,523	30,197
Hungary	 419	350	285	493	410	1,957	3,871
Italy	 1,915	1,658	1,332	2,344	2,008	9,257	19,090
Russia	 8,015	6,580	5,349	8,061	6,120	34,125	69,585
Belgium	 364	342	292	539	478	2,015	3,645
Czechoslovakia	 733	645	494	816	715	3,403	6,559
France	 1,729	1,405	1,231	2,524	2,585	9,474	18,445
Poland	 1,478	1,114	887	1,346	1,142	5,967	12,418
Rumania .	 14 /	Tong e d		No figure	8		
Yugoslavia				No figure		Jami de	

From the foregoing statements it will be seen that Italy is the only one of the Treaty revision Powers at present capable of putting a large army in the field, while nearly all the status quo nations have more or less highly-trained and well-equipped armies. When this is taken into consideration, together with the contrast in economic conditions between the two groups of Powers, it will be seen that from a military standpoint the Treaty revision Powers are in a very inferior position. This in itself may be regarded as a fairly substantial safeguard of peace, at any rate for some time to come. In conclusion, it is suggested that a series of very interesting problems could be worked out on the basis of likely groupments of European Powers when more detailed factors are taken into consideration. The influence of the Danube on the military position of the countries through which it flows alone gives rise to factors of great importance; the frontier lines of the Succession States, formerly included in the Austro-Hungarian Monarchy, reveal important sources of strength and weakness; while the facilities for communication between the eastern and western status quo States raise a matter of great importance.

### GERMANY AND DISARMAMENT

ENERAL GROENER, the Minister of Defence, issued a long statement at the end of November on German disarmament and the refusal, in the German view, of other nations to reduce armaments. He said that twelve years after the proclamations in solemn treaties of a general limitation of armaments the world is spending more on armaments than before the war, and the number of men under arms has increased in Europe alone, excluding the Central Powers, by 550,000.

After referring to the huge quantity of arms and munitions destroyed or surrendered by Germany and her allies of the war, and the precise regulations laid down for every detail of her military and naval forces, he said that such unparalleled exactions made demands on the discipline and self-control of the Germans, which could only be tolerated because behind them stood solemn obligations of general disarmament. But what had become of these obligations? At first the Germans were told that general reduction could only begin when German disarmament was completed. The conditions were fulfilled, but the Governments of certain countries continue to invent pretexts to justify their enormous increase of armaments and to sabotage disarmament.

Talking of the "potential de guerre" which Germany is supposed to possess in her large population and her efficient industries, General Groener asked: "What use to us are the theoretical possibilities of adapting our industry for the production of aircraft, artillery or other military machinery, when this adaptation would have to take place without any protection from the three air divisions of France, comprising some 1,600 aircraft, and her 1,172 heavy guns, and from the highly equipped armies of Poland and Czechoslovakia, ready for immediate action?" French allegations of German secret armament, the General declared, are vaguely defined, and based on the "propaganda of denunciators and calumniators."

# FRANCE AND SECURITY

REAT emphasis has been laid in speeches delivered by the President of the Republic and the Prime Minister upon the need for security. "The Navy," M. Doumergue said, "meets the imperious necessity which a Power like ours—with a great Colonial Empire scattered over the whole globe—cannot ignore or under-estimate, without exposing herself to the gravest risk. When, to the councils of reason, are added the memories of two infinitely cruel invasions, which she has suffered in less than half a century, it is natural and legitimate that, when security is spoken of, it means effective security, guaranteed and beyond discussion. This can surprise no fervent supporter of peace in the world."

In a speech at Alençon, M. Tardieu said that French foreign policy was founded upon the idea of organizing peace, both politically and economically, throughout the world, and France believed that the basis of this organization was to be found in three factors—security, arbitration, and disarmament, in that order. But to-day as yesterday, she refused to permit the order of these three terms to be inverted. Within these limits, no country had been so scrupulous as France in reducing land, sea and air armaments.

### GREAT BRITAIN'S INTERNATIONAL OBLIGATIONS

HENEVER the question of security has been raised in international conferences the British representatives, to whatever political party they may belong, well knowing that the bulk of British public opinion supports them, have stated that Great Britain cannot go beyond her present commitments. Generally speaking, this means that British obligations under the Covenant of the League represents the maximum which this country is prepared to incur. This policy is dictated by an inherent dislike of bilateral alliances on the one hand and of multilateral pacts of unspecified guarantee on the other.

er

ce

ng

ly

te

al

of

or IS

e

ls

d

7,

t

1

e

Pursuit of this policy entailed the rejection of the proposals made by MM. Briand and Poincaré in 1922 for an Anglo-French Alliance directed against Germany, and equally also of the Treaty of Mutual Assistance in 1923, and of the Geneva Protocol in 1924. Perhaps the most valuable contribution made by the Protocol to British foreign policy was the discussion it provoked up and down the country, a discussion which at last opened the eyes of many Englishmen to the obligations which Great Britain had actually undertaken under the Covenant of the League.

On the other hand, the current policy of Great Britain has not prevented her from incurring certain specific regional obligations, such as are found in the Locarno Treaty of Mutual Guarantee and the Convention relating to the Régime of the Straits, the generally accepted policy being that outlined by Sir Austen Chamberlain in 1925: "Special arrangements to meet special needs... these arrangements to be purely defensive in character, framed in the spirit of the Covenant and working in close harmony with the League and under its guidance."

The international obligations of Great Britain fall into two categories, pacific and non-pacific. Those in the first involve her agreements for the pacific settlement of international disputes; those in the second, the understandings which she has given, in company with other Powers, which involve the ultimate use of force.

#### PACIFIC OBLIGATIONS.

In the first category is the Kellogg Pact, signed on 27th August, 1928, and by which the signatory States agreed: firstly, that they condemned "recourse to war for the solution of international controversies," and renounced it "as an instrument of national policy"; secondly, that they agreed "that the settlement or solution of all disputes or conflicts, of whatever nature or of whatever origin they may be . . . shall never be sought except by pacific means." All the remainder of British obligations in this first category must be regarded as complementary and implementary to this primary factor, since they provide the means by which Article II of the Pact may be carried out.

These complementary agreements cover the ground of arbitration, conciliation and juridical settlement, and of these the first two are dealt with in Articles XII, XIII and XV of the Covenant of the League. By Article XII Great Britain is pledged to submit a dispute with a fellow member of the League either to "arbitration or to judicial settlement, or to enquiry by the Council," and in no case to resort to war until three months after the award or judicial decision or the report by the Council.

With regard to the arbitration of disputes, Members of the League are under an obligation by Article XIII to submit any dispute, which they have not been able to settle satisfactorily by diplomatic means, either to arbitration or to judicial settlement, and particular mention is made of the fact that disputes as to the interpretation of a treaty or any question of international law are declared to be generally suitable for arbitration or judicial settlement and that the agency for such settlement shall be either the Permanent Court of International Justice or any other tribunal agreed upon.

Article XV deals with conciliation, and by it Great Britain, in company with other Members of the League, has pledged herself to submit to the Council any dispute which has not been diplomatically settled or submitted to arbitration or judicial settlement. If the Council's award is unanimous, apart from the representatives of the disputing parties, the Members of the League agree not to go to war with any of the disputing parties which comply with the award, but, on the other hand, if one of the disputing parties accepts the unanimous award and the other does not, the Members of the League "reserve to themselves the right to take such action as they shall consider necessary for the maintenance of right and justice."

Articles XII, XIII and XV have recently been the subject of draft amendments adopted by a Committee appointed by the Council in accordance with a resolution of the Assembly of September, 1929, but until these amendments have been ratified in accordance with Article XXVI of the Covenant, the Articles to which they refer remain as they stand at present.

### THE WORLD COURT AND THE OPTIONAL CLAUSE.

For the juridical settlement of international disputes Great Britain accepted the Permanent Court of International Justice by her signature of the Protocol of Adherence which she ratified on 4th August, 1921. By accepting the Optional Clause on 19th September, 1929 (ratified on 27th January, 1930), she placed herself under a further obligation vis-à-vis those other States which have also signed and ratified, to the effect that she accepted "as compulsory ipso facto and without special convention the jurisdiction of the Court in conformity with Article XXXVI, paragraph 2, of the Statute." That is to say she accepted the compulsory jurisdiction of the Court in all classes of legal disputes concerning—

- (a) The interpretation of a Treaty;
- (b) Any question of international law;

- (c) The existence of any fact which, if established, would constitute a breach of an international obligation; and
- (d) The nature or extent of the reparations to be made for the breach of an international obligation.

It will be seen that this is an extension of the obligations incurred under Article XIII of the Covenant.

Great Britain, however, did not place herself under this new obligation without making certain reservations. She excepted from the scope of her adherence the following categories of disputes:—

"Disputes in regard to which the parties to the dispute have agreed or shall agree to have recourse to some other method of

peaceful settlement, and

S,

n

y

e

h

"Disputes with the Government of any other Member of the League which is a member of the British Commonwealth of Nations, all of which disputes shall be settled in such manner as the parties have agreed or shall agree, and

"Disputes with regard to questions which, by international law, fall exclusively within the jurisdiction of the United Kingdom:

"And subject to the condition that His Majesty's Government reserves the right to require that proceedings in the Court shall be suspended in respect of any dispute which has been submitted to the Council and is given within 10 days of the notification of the initiation of the proceedings in the Court, and provided also that such suspension shall be limited to a period of 12 months or such longer period as can be agreed by the parties to the dispute or determined by a decision of all the members of the Council other than the parties to the dispute."

As regards arbitration and conciliation outside the agency of the League, Great Britain has in force two conciliation treaties with the United States (the Bryan Treaty of 1914) and with Brazil (1919), and six arbitration treaties with The Netherlands, Portugal, Siam, Brazil Denmark (with Iceland), and Uruguay.

### OBLIGATIONS INVOLVING FORCE.

In the type of obligations falling under the second category, that is to say those which envisage the use of force, Great Britain is free from all forms of bilateral alliances; her obligations are entirely of a multilateral nature undertaken with the object of taking her share in the enforcement of the peace of the world. The first of these obligations is contained in the Covenant under Articles X and XVI. By the first

of these "the Members of the League undertake to respect and preserve as against external aggression the territorial integrity and existing political independence of all Members of the League." Article XVI contains the provisions for applying sanctions to Covenant-breaking States, who by an infringement of Articles XII, XIII or XV are deemed to have committed an act of war against all Members of the League. Great Britain, in company with the rest of the Member States, is pledged to an immediate severance of all trade and financial relations, to the prohibition of all intercourse between its nationals and the nationals of the Covenant-breaking State, and the prevention of all financial, commercial or personal intercourse between the nationals of that State and the nationals of any other State, whether a Member of the League or not. By this same Article Great Britain has promised to come to the mutual support of other Members of the League in the financial and economic measures referred to above, and to offer mutual support in resisting any special measures aimed at any Member of the League by the Covenant-breaking States. The Article also provides that the Council shall recommend to the various Governments concerned what effective military, naval or air force the Members of the League shall severally contribute to the armed forces to be used to protect the Covenants of the League.

This Article was the subject of a regional interpretation between Great Britain, Germany, France, Italy, Belgium, Czechoslovakia and Poland at the time of the Locarno Conference in October, 1925. These Powers agreed that, though they could not speak for the League as a whole, amongst themselves they interpreted Article XVI as follows:—

"... the obligations resulting from the said Article on the Members of the League must be understood to mean that each State Member of the League is bound to co-operate loyally and effectively in support of the Covenant and in resistance to any act of aggression to an extent which is compatible with its military situation and takes its geographical position into account."

#### LOCARNO.

There are two other Pacts to which Great Britain is a party, and through which she can be called upon to take military action. The first of these is the Locarno Treaty of Mutual Guarantee of October, 1925. By this Agreement Great Britain, Germany, France, Italy and Belgium, as a group and individually, guarantee the present German frontiers of Belgium and France and demilitarization of German territory West of a line drawn 50 kilometres East of the Rhine. Germany on the one hand and Belgium and France on the other mutually undertake that they will in no case attack or invade each other or resort to war against

each other, though this agreement does not apply in the case of five reserved situations. Disputes between them are to be settled by peaceful means.

If, however, there should be a flagrant breach of the peace, or of the demilitarization provisions, each of the Contracting Parties undertakes to come to the aid of the injured State on satisfying itself that an unprovoked aggression has taken place and that immediate action is called for by reason of military movements.

### THE STRAITS CONVENTION.

The second of the Pacts referred to is even more specific in its provisions. This is the Convention relating to the Régime of the Straits signed on 24th July, 1923, at the Lausanne Conference. The parties to the Convention are Great Britain, France, Italy, Japan, Bulgaria, Greece, Rumania and Turkey, and by Article XVIII they incur the following obligation:—

"Should the freedom of navigation of the Straits or the security of the demilitarized zones be imperilled by a violation of the provisions relating to freedom of passage or by a surprise attack or some act of war or threat of war the High Contracting Parties, and in any case, France, Great Britain, Italy and Japan, acting in conjunction, will meet such a violation, attack or other act of war or threat of war, by all the means that the Council of the League of Nations may decide for this purpose."

### THE WASHINGTON FOUR-POWER TREATY.

There remains one other agreement to which Great Britain is a party which does not fall easily into either of the two categories, since it combines the essentials of both of them. This is the Washington Four-Power Treaty of 1922 involving Great Britain, the United States, France and Japan in an agreement "to respect their rights in relation to their insular possessions and insular dominions in the Pacific." By Article II the Contracting Parties agreed that should any dispute arise between them regarding their rights, it must, if unsettled by diplomatic means be referred to a Conference of all four Powers for "consideration and adjustment." On the other hand, should these rights be the subject of external aggression, the Powers decided to communicate with one another in order to agree upon what measures should be taken against the aggressor and whether these measures should be taken jointly or separately. It was subsequently agreed that the scope of the Treaty should be extended to the Pacific Mandates of such of its Contracting Parties as exercise them, but that it did not include the homeland of Japan.

#### EGYPT.

It has been said that Great Britain is not a party to any bilateral agreement or alliance. This is strictly true, but there is among her obligations one which closely approximates to this. By the Declaration of 8th February, 1922, Great Britain declared to the world the independence of the Egyptian Kingdom, but this independence was subject to four reservations, the second of which was "the defence of Egypt against all foreign aggression or interference direct or indirect." This was to be left absolutely in the hands of Great Britain. The important point about this declaration is that it was unilateral, and successive Egyptian Governments have refused to recognize it. If a Treaty between this country and Egypt on the basis of Mr. Henderson's draft Agreement of August, 1929, could be concluded it would supersede the Declaration of 1922 and transform Great Britain's unilateral obligation for Egypt's security into a bilateral treaty of mutual alliance. So far, negotiations ending in such a result have not been successful.

#### MANDATES.

This survey would not be complete without a mention of Great Britain's obligations in regard to those lands over which she exercises a Mandate. She is responsible both for their internal peace and for their protection from external aggression. These obligations are most important in relation to the "A" Mandates, Iraq, Palestine and Transjordania, which are themselves approaching the state of independent sovereignty. In these cases it is probable that when the Mandate is withdrawn, the unilateral obligations will, like those in Egypt, be replaced by bilateral treaties of alliance. This has already been done in the case of Iraq, and the Treaty of Alliance with that country will come into force when Iraq is admitted as a Member of the League of Nations.

### THE LONDON NAVAL TREATY

N 31st December, 1930, H.M. The King's instrument of ratification, in respect of the Irish Free State, of the Treaty of 1930 for the Limitation and Reduction of Naval Armaments was deposited at the Foreign Office by the High Commissioner for the Irish Free State in London. The Treaty therefore came into force from that date. A notification to this fact was sent to all signatories.

Following this notification, President Hoover on 1st January, 1931, issued a proclamation declaring the Treaty in force. His proclamation gave the text of the Treaty, a general resumé of the events which had

preceded it, and a statement that there were no secret files or documents which would in any way directly or indirectly modify, change, add to, or detract from the stipulations of the Treaty.

Notification was made to the Fleet in A.F.O. 104, dated 16th January, 1931, that under the provisions of Article 24 (2) of the London Naval Treaty, 1930, the latter came partly into force on 31st December, 1930, i.e., in respect of the United States of America, the Members of the British Commonwealth of Nations and Japan.

# THE POST-TREATY SITUATION

With reference to Article 17, Part III of the London Naval Treaty, which states that "A transfer not exceeding ten per cent. of the allowed total tonnage of the category or sub-category into which the transfer is to be made, shall be permitted between cruisers of sub-category 'B' and destroyers," the theoretical effect on British naval strength is that 19,220 tons may be transferred from our quota of destroyer tonnage and utilized to increase the number of "B" cruisers; or 15,000 tons may be transferred from our quota of those cruisers and utilized to increase the number of destroyers. This corrects the interpretation of this clause given in the "International Situation" in the Journal of November last; but it does not modify the further deduction that, in practice, although under this clause we might add to our quota of destroyers at the expense of our total cruiser tonnage—a most unlikely course to be adopted—yet the "91,000 tons clause" limiting our cruiser construction, during the period governed by the Treaty, overrides the transfer of destroyer tonnage to cruisers.

### IRAQ

#### BAGHDAD-HAIFA RAILWAY

T is officially announced that, on the recommendation of the Colonial Development Advisory Committee, the Government has approved the grant of financial assistance from the Colonial Development Fund towards the cost of a detailed survey to be undertaken forthwith in connection with the project for the construction of a railway from Haifa to Baghdad. The survey will be carried out by a British firm.

At present, the principal motor transport line across the desert runs from Damascus to Baghdad; the construction of the projected railway would make it possible for land transport to pass from Palestine into Iraq without crossing into French mandated territory, as it is expected that the line to be selected will pass South of the Yarmuk Valley and the Jebel Druze.

# TRANS-PERSIAN RAILWAY

THE Mejliss has passed a Bill authorizing the Government to engage foreign engineers for two years, at an annual cost of £25,000 to finish the construction of the southern section of the Trans-Persian Railway.

The charge we position and to company we describe the state of the state of the contract of the state of the

the "lot not read the control of the

# CORRESPONDENCE

[Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL,—EDITOR.]

### AIRCRAFT CARRIERS OR FLYING BOATS

To the Editor of the R.U.S.I. Journal.

SIR,—From his criticism of my article in the August number, it appears that Air Commodore Samson is in favour of the immediate replacement of aircraft carriers by flying boats. He fails to note, however, that I also am in favour of abolishing the carrier, but not unless or until flying boats can perform, under all weather conditions, every duty of which the carrier and her machines are capable. It is a simple question of whether flying boats can or cannot carry out certain of these duties which experience has taught are essential. It is not a matter of proving that fleet aircraft will never be required to carry them out.

When brought down to this point I feel that Air Commodore Samson will agree with me in favouring aircraft operated from a carrier, for he tries to cover the lack of an endurance of three weeks, and the unseaworthiness of present day flying boats, by asking how often a man-of-war remains at sea for three weeks even in war time. Surely he knows that British warships must be designed to meet possibilities as well as probabilities, and that in consequence they must be able to keep the sea for three weeks on end. They actually did so on many occasions during the late war, especially when on convoy work. The transportation of the First Australian Expeditionary Force is a good example of the latter, for the passage from Albany to Colombo took three weeks, and the distance from the nearest land exceeded five hundred miles for many days.

It is not so much a question of the weather conditions in which marine aircraft can fly as of the sea conditions in which they can take off and alight on the surface. This is where the present day flying boats fail when compared with aircraft operating from carriers. Although great all-round advances have been made recently in aviation, it does not do to be led astray by visions of the future. The fact remains that at present no flying boat exists that possesses the requisite seaworthiness, load and endurance for all naval duties. I cannot agree that the duties I specified were abnormal. After all, from a fleet point of view, aircraft must be like projectiles, and the means of launching them must be as certain as that of the ships' guns. As, however, they are returnable projectiles they cannot be efficient fleet units unless they can return to refuel, and rest their crews under all weather conditions in which ships can fight.

Air Commodore Samson quotes an instance when flying boats operated and destroyers sought shelter in harbour, but may I remind him of an operation off the Frisian coast in which six small 40-ft. coastal motor boats went into action, but their attendant flying boats failed to "take off" owing to the rough sea.

railway would make it possible for land transport to pass from Palestine into Iraq without crossing into French mandated territory, as it is expected that the line to be selected will pass South of the Yarmuk Valley and the Jebel Druze.

### TRANS-PERSIAN RAILWAY

THE Mejliss has passed a Bill authorizing the Government to engage foreign engineers for two years, at an annual cost of £25,000 to finish the construction of the southern section of the Trans-Persian Railway.

our total cruiser blunce - a new politica property by adopting the control by the control by the control by the period of control by the treaty, weether he transfer of destroyer

# CORRESPONDENCE

[Correspondence is invited on subjects which have been dealt with in the JOURNAL, or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the JOURNAL.—EDITOR.]

#### AIRCRAFT CARRIERS OR FLYING BOATS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—From his criticism of my article in the August number, it appears that Air Commodore Samson is in favour of the immediate replacement of aircraft carriers by flying boats. He fails to note, however, that I also am in favour of abolishing the carrier, but not unless or until flying boats can perform, under all weather conditions, every duty of which the carrier and her machines are capable. It is a simple question of whether flying boats can or cannot carry out certain of these duties which experience has taught are essential. It is not a matter of proving that fleet aircraft will never be required to carry them out.

When brought down to this point I feel that Air Commodore Samson will agree with me in favouring aircraft operated from a carrier, for he tries to cover the lack of an endurance of three weeks, and the unseaworthiness of present day flying boats, by asking how often a man-of-war remains at sea for three weeks even in war time. Surely he knows that British warships must be designed to meet possibilities as well as probabilities, and that in consequence they must be able to keep the sea for three weeks on end. They actually did so on many occasions during the late war, especially when on convoy work. The transportation of the First Australian Expeditionary Force is a good example of the latter, for the passage from Albany to Colombo took three weeks, and the distance from the nearest land exceeded five hundred miles for many days.

It is not so much a question of the weather conditions in which marine aircraft can fly as of the sea conditions in which they can take off and alight on the surface. This is where the present day flying boats fail when compared with aircraft operating from carriers. Although great all-round advances have been made recently in aviation, it does not do to be led astray by visions of the future. The fact remains that at present no flying boat exists that possesses the requisite seaworthiness, load and endurance for all naval duties. I cannot agree that the duties I specified were abnormal. After all, from a fleet point of view, aircraft must be like projectiles, and the means of launching them must be as certain as that of the ships' guns. As, however, they are returnable projectiles they cannot be efficient fleet units unless they can return to refuel, and rest their crews under all weather conditions in which ships can fight.

Air Commodore Samson quotes an instance when flying boats operated and destroyers sought shelter in harbour, but may I remind him of an operation off the Frisian coast in which six small 40-ft. coastal motor boats went into action, but their attendant flying boats failed to "take off" owing to the rough sea.

That a seaplane has alighted and "taken off" many times between Socotra and Ceylon does not prove that independently operated amphibious aircraft could supersede aircraft worked from carriers; one swallow does not make a summer. Again, the "stunt" flight quoted by Air Commodore Samson, when a machine remained in the air for three weeks, is no proof in favour of his contention, in fact the reverse, since the flight made it clear that the crew were so fatigued as to render them of little use for fighting. The Navy watches performances of this nature, and occasionally learns something from them, but it requires the proof of prolonged experience, before it can regard them as being of practical utility.

The accuracy in navigation demanded of the modern naval observer is far greater than that required when navigating over the land, for long flights are made when out of sight of ships or land, and during those flights frequent alterations of course are necessary. Great difficulty may be experienced in estimating the wind, yet ultimately the fleet must be found again without the aid of W/T (when W/T silence is in force), and generally it is in some other locality than that in which the machine took off.

As a not altogether out-of-date naval observer with experience of modern fleet work, I cannot agree that the slight difference between battlefleet and cruiser work affects the point at issue. In both cases aircraft are required at short notice under all weather conditions, and they must be on the spot the whole time. The fact that battleships do not normally remain at sea as long as cruisers has produced no arguments in favour of two separate types of destroyer; why, therefore, should matters be different where aircraft are concerned?

I plead not guilty to alluding to "promiscuous torpedo and bombing attacks," for I said that "the role of fleet aircraft is rather to inflict blows as part of the tactical offensive of the fleet as a whole." Carefully planned attacks of this nature are almost a routine in the tactics of modern fleets.

I cannot accept as practical politics the solution put forward by Air Commodore Samson for obtaining personal touch with the crews of aircraft. Once again, this savours too much of "stunts." Admittedly the transfer of persons from one machine to another has been made in mid-air on a few occasions under reace conditions, but the gear required, apart from the difficulties entailed under active service conditions, make the idea too uncertain to be relied on.

Finally, I am accused of a "bold statement" when I say that reciprocating engines cannot be expected to run without repairs as long as a turbine. This is not a mere expression of my own opinion but an engineering fact. An aero engine has done 11,200 miles from Cairo to Capetown and back without repairs,—but many turbines will run over ten times that distance without attention, and if the number of hours run is taken instead of the distance, the superiority of the turbine is even greater; hence the great efforts that have been made to produce the internal combustion turbine.

I am, Sir,
Yours, &c.,
G. C. E. HAMPDEN,

December, 1930.

Commander, R.N.

# GUERILLA TACTICS

TO THE EDITOR OF THE R.U.S.I. JOURNAL,

hd

ld er.

ne

in

to

of

T

e

3

SIR,—In your last issue, Captain Liddell Hart suggests that an occasional course in guerilla tactics might do much to develop "our rather drab standard of infantry tactics." This raises the question whether there is anything in his idea. Is there a danger of our tactics and our minds becoming too hide-bound and regulationized? According to the multitude of his critics, this is the almost inevitable fate of that dull dog, the professional soldier, so presumably we should be on our guard against it.

Actually, it has rather struck me at tactical exercises during the past few years that the attitude of many officers has been rather open to such criticism. Instead of worrying about how to out-manœuvre and outwit their (imaginary) enemy, they worry chiefly as to whether they can be caught out from the "book," and then (most desperately) whether the paragraphs of their written orders comply with the most up-to-date ideas. This is all very well; but I fear it is not the outlook likely to produce an elastic system of tactics nor energetic and resourceful leaders.

Surely the "plan" is the most important part of a scheme, and should be the first thing thought out and the first thing criticised. The "plan" is not only "a matter of opinion," but can be good or bad, and some are definitely bad. The number of solutions which involve direct frontal attacks, because they are the easiest to write orders for, is terrifying. It always seems to me that the essentials of a good plan are:—(1) Thoroughness and (2) Surprise; and every plan should be criticised from this point of view.

All this seems drifting a bit from "guerilla warfare," but it really helps us to get back to it. To obtain these qualities of thoroughness and surprise in our plans we want the corresponding qualities of energy and cunning in our leaders, and the more we can instil them, the safer we will be from regulationism and hide-boundness. I do not consider that the "set scheme" encourages them enough; the "book," formal orders and "the lesson" bulk too large.

I am not suggesting for a moment that we must not have books and set schemes and lessons, but only that it would be good to get rid of them once for a while and have schemes in which the Section, or Battalion Commanders really have to sit down and think "Now how on earth can I outwit the beggar." Roughly, the idea would be to turn two units, sections, platoons or companies loose in a wide area to outwit or scupper one another with the avowed object of encouraging energy, cunning and originality.

Here are some ideas for such schemes, but there is really no limit to the numbers that can be worked out.

- (1) Interception.—A wishes to move from X to Y. B has to intercept him.
- (2) Ambush.—A, with a much smaller force, attempts to ambush B who is moving along a certain road.
- (3) River Crossing.—A is holding a long line of river. B to attack and form a bridgehead.
  - (4) Close country fighting.—Two small hostile forces in a large wooded or close area to locate and destroy one another.
  - (5) A is in charge of a section of a blockade cordon. B has to get a convoy through.

Similarly machine gun schemes could be worked out.

Schemes like this are invaluable, too, for training in night work. Were they not the foundation of the training of the super-troops of "The Cavalry went through?" Of course there are difficulties. The chief is umpiring. In some schemes the umpire may be able to play his usual dignified role, but in others he would give the show away, and he must be forced to crawl and cower with his side. So perhaps very senior officers should not be asked to umpire in such work. But there must be enough umpires for each detachment to have one. Isolated scouts might be precluded from firing as it is difficult to support their claims. Normally, if a man has been seen clearly enough to be identified by a man with a rifle he may be taken as out of action.

Any ruse should be permitted and encouraged. No assistance must be given under any circumstances. If the units are not clever enough to locate one another, it is their fault. The whole idea of the schemes must be for the one leader and unit to out-manœuvre and defeat the other. Such schemes would, I think, provide a refreshing change in training, encourage the leadership of the leader and develop the much-needed initiative of the troops. Also I think they would thoroughly amuse all concerned.

I am, Sir, Yours, etc.,

R. C. G. FOSTER, Captain, The Queen's Royal Regiment.

Guildford.
20th December, 1930.

#### ECONOMY OF FORCES

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In the last number of the JOURNAL, Lieutenant-Colonel Whitton suggests it is wrong to assert that the word "economy" is always synonymous with "reduction." With this I fully agree. It was never my intention to suggest that economy cannot still be given its original meaning of orderly and efficient management. My statement was that this meaning had almost ceased to be current in English—with the implication that it was unlikely to be familiar to the majority of officers to-day.

If the Principles of War are to be lights to guide the footsteps of all officers, not merely of those who have made a special study of the subject, surely the words in which they are phrased should be as self-explanatory as possible. Unless this is so there must be a danger of the phrase being misconstrued. It appears to me unsound to have to say: "This is the principle of Economy of Force. Now it is not correct to give the word economy its accustomed meaning; we have to remember that it is derived from Greek words signifying the management of a household and we are here using it only in the sense of orderly and efficient management."

Even if this homily always accompanied an explanation of the principle, it is doubtful whether it would be fully effective. The human mind is very much a creature of habit, and it will never be easy to eradicate the familiar meaning of a familiar word.

London, 9th December, 1930. I am, Sir,
Yours, etc.,
Phormio.

#### COMMISSIONED WARRANT OFFICERS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—There are many points in favour of Lieutenant J. H. Moxham's proposed scheme for commissioned warrant officers in the Army.

My objection thereto, however, is that both the age limit for first appointment and the age for compulsory retirement are too low. The former suggests another scheme for jumping comparatively young and inexperienced soldiers over the heads of experienced warrant and senior non-commissioned officers. This is an unmerited slight on "the Backbone of the Army" which cannot fail to have a detrimental effect on their prestige. It might also bring into the Army young men who would enlist simply with the idea of reaching such ranks and who would regard themselves not as the comrades of, but as superior to, the ordinary soldier. One sees the effect of this in India where many youths of the domiciled community enlist with the idea of getting on to some Indian departmental corps.

As regards compulsory retirement. A man of forty-five is still a young man and probably has on his shoulders the responsibility of a family. The most efficient soldier is of little value in the civilian labour market. Presumably these men would not be eligible for appointments usually given to retired officers and one could hardly expect them to become commissionaires.

My own suggestions on these points would be as under.

For first appointment:-

(i) Not more than thirty-two years of age.

(ii) Not less than eight years' service (excluding boy's service).

(iii) To have held the rank of sergeant or above for not less than three years.

Age for compulsory retirement, fifty years. In the French Army the age for compulsory retirement of subalterns and captains is over fifty and it is proposed to raise it to fifty-five.

I am, Sir,

Canterbury, 29th November, 1930. Yours, etc.,
W. Moore, Lieutenant (retired).

# GENERAL SERVICE NOTES

#### IMPERIAL DEFENCE COLLEGE

Air Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., has succeeded Major-General W. H. Bartholomew, C.B., C.M.G., D.S.O., as Commandant of the Imperial Defence College.

# CONTROL OF THE N.W. FRONTIER

COMMITTEE OF INQUIRY.

It is officially announced by the Government of India that, with the concurrence of His Majesty's Government, the existing system of tribal control and defence against tribal risings on the North West Frontier will be examined by "a small authoritative committee" with the object of determining how far the principles underlying the present methods are justified, and to what extent they should be approved for further retention and development.

The members of the Committee are:-

Mr. E. B. Howell, Foreign Secretary to the Government of India (President); Air Marshal Sir Geoffrey Salmond, Air Officer Commanding R.A.F., India; Major-General S. F. Muspratt, Deputy Chief of Staff, Army Headquarters, India:

Mr. A. C. Badenoch, officiating Controller of Civil Accounts.

The terms of reference to the Committee, which have been made as comprehensive as possible, include consideration of the whole question of tribal allowances and political control, and the strength, disposition, organization, co-ordination and mutual relations of the various categories of the civil armed forces, R.A.F. and Regular Army. It will be the duty of the Committee to submit recommendations for reduction of expenditure where possible, and for preventing the accumulation of military or quasi-military expenditure on Border administration and defence. The Committee was due to begin its work at Peshawar about 25th January. Its enquiries are expected to occupy about two months.

# FRANCE

#### ANTI-AIRCRAFT DEFENCES OF TOULON.

For some time past, measures have been studied for protecting Toulon arsenal and town from gas attacks. A series of exercises took place at the beginning of November over Toulon between bombarding aircraft and chasing planes entrusted with the defence of the Naval Sector. A number of new searchlights has mounted as a result of these exercises.

Anti-aircraft exercises were carried out in the town, arsenal and roads of Toulon, during the day of 15th November. A limited area of the arsenal was subjected to two successive attacks, from the land and the sea respectively.

On the 20th November, further successful exercises were carried out at Toulon, during which all lights were extinguished immediately an air attack was signalled. Before the alarm was given, soldiers and sailors were employed for several hours in turning out street lights.

The streets in the town and suburbs were patrolled by gendarmes, to ensure that all lights carried by motors and other vehicles were extinguished. It was a moonless night, with a slight mist, and when the sirens blew at 04.30 the towns of Toulon, La Seyne, St. Mandrier, etc., were instantly plunged in complete darkness except at a few points where the sirens were not heard. More sirens are to be set up before the next exercise.

The authorities are now satisfied that Toulon can thus be made invisible from the air on a moonless night, but, as the lights of neighbouring towns might guide enemy aircraft to the port, it has been decided to apply the darkening regulations to the whole coastline of the Department of Var, and ultimately to the whole Department.

These exercises are only the first of many measures forming the whole scheme of anti-aircraft protection; the others remaining to be carried out will be more difficult owing to their greater cost. They include the formation and training of special squads to purify gassed areas; the creation of medical centres for treating victims of gas attacks; the formation of stocks of chemicals to counteract the effects of poison gases; the formation of squads of volunteer firemen, etc.

# The Moyal Township of the left of the Transact Trees of SPAIN

Thursday, willing the Securities

THE ROYAL TOURNAMENT MAI

#### SUPPRESSION OF THE FLYING CORPS.

An official Decree, published in Madrid on the 9th January, suppressed the Spanish Flying Corps, and directed that officers and other ranks were to cease to wear their special green uniform with gold facings, and to revert to the uniform of their former units.

Officers who desire to continue to serve in the flying branch of the Army, which is being re-organized, were required to present a petition to be allowed to do so, and a special board is to decide as to their re-admission or otherwise. A section of Military Aeronautics has been created and will be under the command of a General of Brigade. There will be four battalions, each composed of three or four groups, each group consisting of three flights. A battalion will be stationed at Getafe, Seville and Leon in Spain and at Tetuan in Morocco respectively. Groups or flights may also be attached to battalions at other towns where aerodromes exist.

The Decree contained scathing criticism of the unadaptability of the Flying Corps organization to Spanish military psychology, and the preference shown by some officers for indulging in spectacular feats rather than attending to routine duty. The suppression of the Flying Corps is the outcome of Major Ramon Franco's efforts in connection with the recently attempted revolution.

#### UNITED STATES OF AMERICA

AIR SERVICES AND COASTAL DEFENCE.

A problem confronting the U.S. authorities during the past ten years has been the delineation of the duties of the Naval Air Service and the Army Air Corps in respect of coast defence.

The operation of shore-based squadrons by the Naval Air Service in coast defence is claimed by the War Department to be an infringement on the Army Air Corps' responsibility in this direction, while the Navy Department is equally insistent on its participation in coastal defence. The whole question hinges on the duplication of effort by the two Services under present conditions, and, of course, problems of command in time of war also arise. Constant controversy between the War and Navy Departments has existed and the President has now brought the matter to a head by calling for an early settlement of the problem between the two branches. This move by the President has been dictated by a desire to economize on the expenditure which the present dual system causes, and in some quarters it is considered that one result of the move will be to raise once again the question of unification of the air services. While the Army has a leaning towards this latter solution, in the belief that better conditions of promotion, etc., would be gained, the Navy has no inclination to depart from the present position as regards its own air arm.

# THE ROYAL TOURNAMENT 1931

The Royal Tournament will be held at Olympia, Kensington, London, from Thursday, 28th May, to Saturday, 13th June, 1931, inclusive.

# NAVY NOTES

#### GREAT BRITAIN

#### HIS MAJESTY'S YACHTS.

Vice-Admiral the Hon. Sir Herbert Meade, K.C.V.O., C.B., D.S.O., has been appointed Vice-Admiral Commanding H.M. Yachts, in succession to Vice-Admiral Sir Henry T. Buller, G.C.V.O., C.B., A.D.C., to date 1st April, 1931.

#### FLAG LIST CHANGES.

The first changes on the Flag List, involving a promotion from the Captains list, which had occurred since 23rd May, nearly seven months before, were announced on 12th December. Admiral Sir Edwyn S. Alexander-Sinclair, G.C.B., M.V.O., was placed on the Retired List for age, to date 12th December. In consequence, Vice-Admiral Sir John D. Kelly, K.C.B., was promoted to be Admiral; Rear-Admiral Eric J. A. Fullerton, C.B., D.S.O., M.A., to be Vice-Admiral; and Captain F. L. Tottenham, C.B.E., A.D.C., to be Rear-Admiral, all from the same date.

#### FLAG APPOINTMENTS.

A series of changes in Flag appointments up to the end of April was announced by the Admiralty on 29th November, 1930, as follows:—

PORTSMOUTH COMMAND.—Admiral Sir Arthur K. Waistell, K.C.B., is to be Commander-in-Chief at Portsmouth, in succession to Admiral of the Fleet Sir Roger Keyes, Bt., G.C.B., K.C.V.O., C.M.G., D.S.O., LL.D., D.C.L., to date 8th May, 1931. Sir Roger Keyes took up this command on 29th April, 1929, and was promoted to Admiral of the Fleet on 8th May, 1930.

BATTLE CRUISER SQUADRON.—Rear-Admiral Wilfred Tomkinson, C.B., M.V.O., Assistant Chief of the Naval Staff, is to be Rear-Admiral Commanding the Battle Cruiser Squadron, in succession to Vice-Admiral A. D. P. R. Pound, C.B., to date 24th April, 1931.

SECOND CRUISER SQUADRON.—Rear-Admiral E. A. Astley-Rushton, C.B., C.M.G., is to be Rear-Admiral Commanding the Second Cruiser Squadron, in succession to Rear-Admiral the Hon. Matthew Best, C.B., D.S.O., M.V.O., to date 27th April, 1931.

DEVONPORT DOCKYARD.—Rear-Admiral Harold O. Reinold, C.B., C.V.O., is to be Admiral Superintendent, Devonport Dockyard, in succession to Vice-Admiral Oliver Backhouse, C.B., to date 2nd March, 1931.

GIBRALTAR.—Rear-Admiral Thomas N. James, M.V.O., is to be Rear-Admiral in Charge and Admiral Superintendent, Gibraltar, in succession to Rear-Admiral Berwick Curtis, C.B., C.M.G., D.S.O., to date 20th March, 1931.

Assistant Chief of Naval Staff.—Rear-Admiral John K. im Thurn, C.M.G., C.B.E., is to be Assistant Chief of the Naval Staff, in succession to Rear-Admiral Wilfred Tomkinson, to date 24th April, 1931.

# MATERIAL.

Orders for 1930 Programme.—Speaking at Dalton on 13th December, the First Lord of the Admiralty announced that tenders for the construction of ships under the 1930 programme had been received, and it was proposed to divide up the work so as to give practically all the depressed areas some measure of it. Subject to the settlement of certain points of detail, contracts and orders were placed as follows:—

Cruisers ("Leander" Class):—"Neptune," Portsmouth; "Orion," Devonport; "Achilles," hull and machinery by Cammell Laird & Co., Ltd., Birkenhead; machinery of the two dockyard cruisers by Vickers-Armstrongs, Ltd., Barrow-in-Furness, and the Parsons Marine Steam Turbine Company, Ltd., Wallsend-on-Tyne.

Destroyer Leader:—"Duncan," Portsmouth, with machinery by Beardmore & Co., Ltd., Dalmuir.

DESTROYERS ("Defender" Class):—"Defender" and "Diamond," Vickers-Armstrongs, Ltd., Barrow-in-Furness; "Daring" and "Decoy," John I. Thornycroft & Co., Ltd., Woolston, Southampton; "Dainty" and "Delight," Fairfield Shipbuilding Co., Ltd., Govan, Glasgow; "Diana" and "Duchess," Palmers' Shipbuilding Co., Ltd., Jarrow-on-Tyne.

OTHER 1930 SHIPS.—Names were chosen as follows for the other units authorised in 1930:—Minelaying submarine, "Porpoise," to be built by contract; submarines "Starfish" and "Seahorse," Chatham; netlayer "Guardian," Chatham; sloops ("Shoreham" class), "Falmouth," "Milford" and "Weston-super-Mare," Devonport; "Dundee," Chatham.

THE 1929 PROGRAMME.—Work is now in progress on the following ships of the 1929 programme:—Cruiser "Leander," laid down at Devonport Dockyard, 8th September, 1930; flotilla leader "Kempenfelt," J. S. White & Co., Ltd., East Cowes; destroyers "Comet" and "Crusader," Portsmouth Dockyard; "Cygnet" and "Crescent," Vickers-Armstrongs, Ltd., Barrow; submarines "Thames," Vickers-Armstrongs, Ltd., Barrow; "Swordfish" and "Sturgeon," laid down at Chatham, 1st December, 1930, and 31st January, 1931; sloops "Fowey," launched at Devonport Dockyard, 4th November, 1930, and "Shoreham," launched at Chatham Dockyard, 22nd November, 1930.

Progress of the 1928 Programme.—With the launch at the works of Swan Hunter & Wigham Richardson, Ltd., Wallsend-on-Tyne, of the destroyer "Bulldog," on 6th December, 1930, all the vessels of the 1928 programme are in the water. No cruisers are building under this programme, contracts for the "Surrey" and "Northumberland" having been cancelled. The other units are the flotilla leader "Keith," due for delivery in March by Vickers-Armstrongs, Ltd., Barrow; the destroyers "Blanche," "Boreas," and "Brilliant," due in February, "Brazen," "Boadicea," "Basilisk" and "Bulldog," due in March, and "Beagle," due in April; the submarines "Regent," "Regulus" and "Rover," completed in December and January by Vickers-Armstrongs, Barrow, and the "Rainbow," due for completion at Chatham in September, 1931; and the sloops "Hastings," "Penzance," "Folkestone" and "Scarborough," all of which have now been completed.

"CAPITAL SHIPS."—In a Fleet Order dated 5th December, 1930, the Admiralty announced that it had been decided to reintroduce the term "capital ships" for use on any occasion when it is convenient to employ a generic title to include battleships and battle cruisers.

Autreal Temisinson, to date rath April, 1031.

Scrapping of Battleships.—In advance of the ratification of the London Naval Treaty, orders were issued in October for the battleship "Benbow," one of the five capital ships to be scrapped by Great Britain under the Treaty, to be prepared for sale. The work was completed at Devonport Dockyard in mid-January. On 22nd January, the flag of the Rear-Admiral Commanding Third Battle Squadron was transferred from the "Emperor of India" to the "Marlborough" at Portsmouth, and the "Emperor of India" paid off into dockyard control on the same day for preparation for sale.

#### PERSONNEL

COMMANDERS FOR R.N.R. POSTS.—A new Fleet Order notifies that in future the appointments of Commanders for R.N.R. duties and for liaison duties with the Mercantile Marine will normally be for three years' duration. There are usually three such officers, working under the orders of the Admiral Commanding Reserves and the Director of Plans, and stationed respectively in London, Southampton and Liverpool.

REAR-ADMIRALS' EPAULETTES.—It has been decided, with the King's approval, that the star on the epaulette of a Rear-Admiral shall be 1\(\frac{1}{4}\) inches in diameter. It was formerly 2 inches in diameter.

RESPONSIBILITY FOR ELECTRICAL Machinery.—The arrangements for transferring the responsibility for certain electrical machinery from the torpedo officer to the engineer officer described in A.F.O. 2060, 1929, are being introduced in the following ships:—"Nelson," "Rodney," "Malaya," "Warspite," "Queen Elizabeth," "Revenge," "Ramillies," "Royal Oak" and "Renown." Provisional alterations to complements, peace and war, provide for the reduction of certain A.B.'s (S.T.) and the addition of stokers trained in high power electricity.

BADGES FOR PHOTOGRAPHERS.—A distinguishing badge has been approved for wear by photographer ratings. Photographers, 1st class, will wear the device of a camera with a star above; those of the 2nd class a camera without the star. The wearing of the badge by Chief Petty Officers is optional; if worn, it is to be on the collar in a similar position, but not in addition, to gunnery and torpedo badges. Other ratings are to wear the badge on the right sleeve in a similar position to the good shooting badge.

BADGES FOR AIR GUNNERS.—A distinguishing badge, in the form of an aeroplane, has been introduced for Telegraphist Air Gunners, to be worn underneath the Telegraphist badge. Descriptions and issuing prices were notified in A.F.O. 2761/30.

Promotion from Warrant Rank.—On 5th December it was announced that the Admiralty had decided to discontinue in all branches the arrangements laid down in Article 322, clause 1 (b), Appendix XII, Part 13, King's Regulations and Admiralty Instructions, for earlier promotion to Lieutenant by selection after passing certain examinations. The abolition of this scheme in the Signal Boatswain and Warrant Shipwright branches was announced in 1928. As a general rule, half of the vacancies for Lieutenant and above (8 per cent. of the total numbers of Warrant Officers and above in each category) were to be filled by promotion for long and zealous service and the other half by accelerated promotions. In future, the number of Lieutenants and above in the branches concerned will be maintained at a figure not exceeding 8 per cent. of the total of officers in each branch by promotion for long and zealous service only.

Officers on the lists of Commissioned Gunners, Commissioned Gunners (T), Commissioned Boatswains, Commissioned Engineers and Commissioned Mechanicians at the date of the new order (5th December, 1930) will be allowed up to 1st January, 1934, to obtain the full qualifications for accelerated promotion, apart from sea service, and any officer so qualified by that date will be eligible for consideration for promotion under Article 322 upon completion of the necessary three years' sea service as a commissioned officer from warrant rank.

Commissioned Royal Marine Gunners on the list at the date of the order will be allowed up to 1st January, 1934, to obtain the full qualifications for accelerated promotion, apart from sea service, and any officer so qualified by that date will be eligible for consideration for promotion under Article 765, clause 3, upon completion of the necessary three years' sea service as a Commissioned R.M. Gunner.

# EXERCISES AND CRUISES.

ATLANTIC FLEET SHIPS IN WEST INDIES.—As part of the Spring cruise of the Atlantic Fleet, a detachment consisting of the "Nelson" and "Rodney," the Second Cruiser Squadron, and the minelayer "Adventure" is visiting a number of islands in the West Indies, including Jamaica, Barbados and Trinidad, and Demerara in British Guiana. In all, thirteen British possessions in the West Indies will be visited by the ships, eight of them by the two battleships.

In addition, at the invitation of the United States Government, the Commander-in-Chief of the Atlantic Fleet, Admiral Sir Michael Hodges, in the "Nelson," will pay a visit from 23rd to 28th February to the Commander-in-Chief of the United States fleet, Admiral J. V. Chase, at Colon, Panama, in which vicinity the United States fleet will be carrying out exercises. As Colon is United States territory, this may be regarded as in the nature of a return visit for that paid by the United States battleships "Utah," "Florida," and "Arkansas" to Scotland last summer.

MEDITERRANEAN WINTER CRUISE.—The Mediterranean Fleet under Admiral Sir Ernle Chatfield left Malta on 13th January for its winter cruise in the Levant, returning on 30th January. The places visited included Corfu, Argostoli, Port Drepano, Suda Bay and Tripoli (Libia). Early in March the fleet is due to meet the Atlantic Fleet in the Western Mediterranean for the usual combined exercises.

AMERICA AND WEST INDIES.—Except for the "Danae," which was at the Falklands, the Eighth Cruiser Squadron spent Christmas at Bermuda, but on 5th and 12th January it dispersed for independent cruises until the end of March. The "Despatch," flagship of Vice-Admiral Vernon Haggard, C.B., C.M.G., left for Grenada, Trinidad and Barbados, and at the last-named was to meet the "Nelson," "Dorsetshire" and "Norfolk" from home. The "Dauntless" left for Tortola and Trinidad, where she was to meet the "Rodney," "Hawkins" and "York." The "Danae" was to cruise off the South-West coast of America, and to be at Buenos Aires at the time of the opening of the British Exhibition by the Prince of Wales on 14th March.

#### ORGANIZATION AND DISTRIBUTION.

SECOND BATTLE SQUADRON.—H.M.S. "Valiant," after large repairs and the fitting of bulge protection, recommissioned at Portsmouth on 2nd December with a Chatham crew for service in the Second Battle Squadron, Atlantic Fleet. On the same date, H.M.S. "Barham" paid off into dockyard control at Portsmouth for large repairs.

SECOND CRUISER SQUADRON.—H.M.S. "Exeter" is due to complete at the end of June, 1931, and will then relieve the "Hawkins" in the Second Cruiser Squadron. The "Hawkins" will reduce to reserve before the "Exeter" commissions. The flag of the Rear-Admiral Commanding will be transferred to the "Dorsetshire" at the end of April, 1931, when the present flag officer is relieved.

RESERVE FLEET.—The flag of the Vice-Admiral Commanding Reserve Fleet was transferred to the "Frobisher" on 9th December from the "Constance." The latter ship was ordered to be berthed alongside the flagship and reduced to "extended notice" status. The "Calliope," formerly so employed, was ordered to be taken in hand for scrapping. The cruiser "Cambrian" has been earmarked to relieve the "Cleopatra" as ship of the Senior Officer, Reserve Fleet, The Nore, when the latter vessel is scrapped this year.

SLOOPS ON FOREIGN STATIONS.—The new sloop "Hastings" commissioned at Devonport on 27th November for service in the Persian Gulf Division, East Indies Station. She arrived at Henjam in January to replace the "Lupin." The latter had already gone to Malta in October for refit prior to relieving the "Clematis" in the Red Sea Division. The "Clematis" left Malta on 4th November, arrived at Portsmouth on the 16th, and was paid off a few days later for sale. The "Penzance" commissioned at Devonport on 15th January for service in the Persian Gulf in place of the "Cyclamen," which was transferred to the Cape in place of the "Wallflower," the last-named returning home for scrapping.

## MISCELLANEOUS.

INCIDENT IN H.M.S. "Lucia,"—On Sunday morning, 4th January, an infraction of discipline occurred on board H.M.S. "Lucia," depot-ship of the Second Submarine Flotilla, at Devonport, when thirty seamen remained below and shut themselves in when ordered to fall in for duty. They were arrested and taken to the Royal Naval Barracks. A Court of Inquiry was held, and subsequently the Admiralty directed that four able-seamen should be tried by Court-Martial. The Courts-Martial were held on 20th, 21st and 22nd January. One man was sentenced to three months' imprisonment with hard labour and dismissed the Service; a second to six months' imprisonment with hard labour and dismissed the Service; and the two others to six months' detention. The remainder were dealt with summarily after the Courts-Martial.

On 28th January, the First Lord of the Admiralty, in a statement in the House of Commons, announced that the Board considered that the conditions in H.M.S. "Lucia" were due to some extent to want of tact and consideration on the part of the Captain and Executive Officer, and incapacity on the part of the Divisional Officer concerned. The Board had decided to modify the punishments by substituting for the sentence of imprisonment with hard labour that of detention in the two cases in which the former punishment was awarded, and also to reduce the period of detention by one-third in all the cases. The officers referred to would have their appointments terminated forthwith and would be placed on half pay, with an expression of the Board's serious displeasure. H.M.S. "Lucia" would be paid off immediately and recommissioned with a new crew of officers and men.

RESCUE BY H.M.S. "SUFFOLK."—In the House of Commons on 17th December, particulars were given by the First Lord of the Admiralty of the rescue by officers and men of H.M.S. "Suffolk" of the crew of the Swedish motor-ship "Hedwig" a few days earlier. The "Hedwig," which was a Dutch registered vessel, had ridden over a reef and was lying in calm but very shallow water in the Pratas

Lagoon. H.M.S. "Suffolk," Captain G. S. Arbuthnot, D.S.O., took up a position outside the reef opposite the "Hedwig" and lowered a motor boat and whaler, which proceeded to cross the lagoon. As visibility was poor the "Suffolk" made smoke to give the rescue boats a leading mark. The boats crossed the lagoon, but could not reach the wreck owing to the shallow water. The crew of the "Hedwig" abandoned ship on a raft, and were transferred to the "Suffolk's" boats, which returned to the ship and were safely hoisted in, although there was considerable sea and wind. The boats covered a total distance of 28 miles, mostly through coral reefs, in poor visibility and partly in rough sea. The appreciation of the Board of Admiralty of the good work performed by Commander E. S. F. Fegen, the officer-in-charge, and the boats' crews, was conveyed to the Commander-in-Chief.

Sound Films Afloat.—The Admiralty has recently had under consideration the possible uses of sound films on board ship, as it has been represented that with the rapid decrease in the number of silent films apprehension is felt that the arrangements made by many canteen committees for showing films will soon become impossible to maintain. It is pointed out that, should the adoption of the talking film be desired by the Fleet, it cannot be achieved without a material increase in the cost of cinematograph entertainment. It may, however, be found possible to mitigate this if a comprehensive scheme for purchase, or hire purchase, of installations, and for hire and distribution of films should be found feasible.

Coastguard Inquiry.—The appointment was announced on 12th January by the Board of Trade of a committee to inquire into the efficiency and adequacy of the present organization for carrying out the coast-watching duties of the Coastguard Service, and to report what modifications, if any, in the organization are in their opinion desirable. The membership of the committee is:—Admiral Sir George P. W. Hope, K.C.B., K.C.M.G. (Chairman), Mr. Robert F. Bell, Sir Osborn G. Holmden, K.B.E., and Mr. James Milne, C.S.I. Mr. W. J. Killingback, of the Board of Trade, will act as secretary to the committee.

# THE FLEET AIR ARM

NAVAL OBSERVERS' COURSE.—The following arrangements for the next Naval Observers' Course have been approved:—Part I will include a course in H.M. Signal School from 13th April to 29th May, 1931; a Tactical Course, 1st June to 5th June; and a course in H.M.S. "Excellent," 8th June to 26th June. Part II will be at the R.A.F. School of Naval Co-operation, Lee-on-Solent, beginning on 13th July, 1931.

New Equipment.—The Hawker fighter known as the "Hornet," and renamed the "Fury" for use as a land fighter, has also been adopted for use in the Fleet Air Arm, and will bear the name of "Nimrod," in accordance with the Air Ministry scheme of nomenclature. The Hawker bomber known as the "Hart" has also been adopted for use as a fleet spotter reconnaissance machine, and will be known as the "Osprey."

LIFE-SAVING DINGHIES.—Replying to a question in Parliament on 12th November, Mr. Montague, Under-Secretary for Air, said that a life-saving collapsible dinghy, which can be very rapidly inflated by mechanical means, has been subjected to practical tests with satisfactory results, and will be carried by all seagoing aeroplanes which are large enough to be so equipped. The reintroduction of wooden construction would be a somewhat retrograde step, but action is being

taken to improve the buoyancy of all aircraft operating from aircraft carriers and all-metal seagoing aircraft.

e

h

e

h

Warships' Catapults.—The First Lord of the Admiralty stated in the House of Commons in November that of twenty-one British warships equipped with flying-off facilities, five had catapults and sixteen flying-off platforms for light aircraft. The latter were regarded as obsolescent, and steps were being taken to increase the number of ships fitted with catapults. Thirty-three United States warships, added the First Lord, were fitted with catapults suitable for launching aircraft; these included eighteen battleships, three of which would be scrapped under the London Treaty.

Use of Parachutes.—For the first time, machines of the Fleet Air Arm are being fitted with parachutes as a result of the invention of a new quick-release type of parachute harness. Hitherto, officers and men have not been disposed to wear parachutes because of the difficulty in being encumbered with them in the event of a forced descent or a crash when flying over the water. With the new form of harness, instantaneous release is effected by pressing the knob of the quick release device, and this can be done in any emergency, whether in the cockpit, or in landing after a parachute descent. The whole of the adjustment required is effected by two buckles, instead of six buckles, as in the standard harness.

FLYING CONDITIONS AT GIBRALTAR.—Experimental work in a wind-tunnel has been done on a model of the Rock of Gibraltar, scale 1/5000, to determine the wind disturbance in lee of the rock; and this has been followed by work at Gibraltar itself with balloons, theodolites and kites. Certain deductions which had been made provisionally were communicated in Fleet Orders on 9th January, 1931. A diagram (E.F.O. 191/30) shows the areas of greatest flying risks for seven wind directions from north-east to south-east.

#### ROYAL NAVAL VOLUNTEER RESERVE

APPOINTMENTS.—The Earl of Kilmorey has been granted a Commission as Captain, R.N.V.R., and appointed Commanding Officer of the Ulster Division R.N.V.R., to date 30th September, 1930.

Surgeon Captain R. J. Willan, M.V.O., O.B.E., V.D., M.B., F.R.C.S., M.S., R.N.V.R., has been appointed Honorary Surgeon to His Majesty the King, in the vacancy caused by the death of Surgeon Captain A. R. Brailey, V.D., R.N.V.R.

Spring Cruise, 1931.—Ten officers and a large number of ratings proceeded in vessels of the Atlantic Fleet for training during the Spring cruise.

# FOREIGN NAVIES

#### CHINA

BRITISH NAVAL MISSION.—In accordance with the Chinese-British Naval Agreement signed in June, 1929, in Nanking, a British Naval Mission will proceed to China to advise and assist the Ministry of the Navy of the Nationalist Government in the projected reorganization and modernization of the Chinese Navy.

Captain H. T. Baillie-Grohman, D.S.O., O.B.E., who was promoted in June last, has been selected as the first Head of the Naval Mission. He will assume

the rank of Commodore in the Chinese Navy, and is proceeding to China to arrange for the establishment of the Mission with Vice-Admiral Chen, the Vice-Minister of the Navy at Nanking.

#### FRANCE

NAVAL ESTIMATES.—The Naval Estimates for 1931-32 amount to 2,856,511,533 francs as against 2,722,741,389 voted in 1930; the two years are not, however strictly comparable. In 1930 a sum of 90,000,000 francs was voted for coast defence, and this year only 12,000,000 francs are asked for under this heading, as the greater part of the money required for coast defence in 1931-32 will be provided for under "Frontier Defence," which forms part of a separate Bill. The increase for essentially naval services is therefore about 212,000,000 francs.

New Construction.—All the ships of the 1922, 1924 and 1925 programmes and the greater part of those authorised in 1926 will have completed their trials by the end of 1930. Nearly all the ships of the 1927 programme will commence their trials in 1931. The construction of those of the 1929 and 1930 programmes is being continued at the normal rate. The Estimates do not include any provision for laying down new ships as this will form part of a separate Bill, but they do provide for laying down four new coast-defence submarines, two submarine chasers and one coastal motor-boat.

Modernizing of Battleships.—The work of modernizing the boilers of the "Courbet" is completed, and the "Jean-Bart" and "Loraine" are now in hand. The "Bretagne," "Paris" and "Provence" will be taken in hand in 1931-32.

CRUISER TRIALS,—The training cruiser "Jeanne d'Arc" carried out her steam trials off Lorient in December. On the night of the 28th she was caught in a heavy gale near Belle Isle and sent out an S.O.S. call. Tugs put out to her assistance.

FLOTILLA LEADERS NAMED.—The six 2,440-ton flotilla leaders of the 1929 programme have been named the "Vauquelin," "Kersaint," "Cassard," "Tartu," "Breze," and "Chevalier Paul," after distinguished French seamen. Submarines of the same programme, with a displacement of 1,379 tons (1,968 tons submerged) have been named the "Centaure," "Espoir," "Heros," "Tonnant" and "Conquerant"; and a minelaying submarine the "Diamant."

Submarine "Surcouf."—The 2,880 tons cruiser submarine "Surcouf" has commissioned for trials.

#### ITALY

Launche of the "Gorizia."—On 28th December, the cruiser "Gorizia" was launched at Leghorn. Her construction had been expedited in accordance with a request of Signor Mussolini, when he visited the Leghorn shipyards in May, that the "Gorizia" should be afloat by the end of the year. She is the fifth of the Italian 10,000-ton cruisers, and is 600 feet long, with engines of 90,000 horsepower, a speed of 32 knots, and a main armament of eight 8-inch guns. Three seaplanes, launched from a catapult, will form part of her equipment.

LAUNCH OF THE "COLLEONI,"—On 21st December, the cruiser "Bartolomeo Colleoni" was launched at Genoa. This was the last of the four 5,000-ton cruisers of the "Condottieri" type, with a main armament of eight 6-inch guns. In this class, with machinery of 95,000 horse-power, the designed speed is 37 knots. On trial in November, the "Alberico da Barbiano," the third of the group, was

reported to have reached an average speed of 40 knots, with a maximum of 42.25 knots.

New Construction in 1930.—On 1st January, the Rome newspapers gave prominence to a list of the new vessels of war launched by Italy during the year 1930. This list included six cruisers, one flotilla leader, six submarines, and two destroyers, with a total tonnage of 59,293. This and other references to Italian warship construction were held to indicate the determination of Italy to achieve that "constant and growing efficiency rendered necessary by the present international situation."

# **JAPAN**

NAVAL ESTIMATES.—The Naval Estimates for 1931-32 provide for an ordinary expenditure of £14,229,300, and an extraordinary expenditure of £6,804,100, making a total of £21,030,400. These Estimates include £954,000 for the initial yearly replacement programme resulting from the London Naval Treaty.

New Submarines.—The submarines "I.64," I,650 tons, and "I.4," I,970 tons, have completed their trials and joined the fleet.

NAVAL AIR STATION.—The new Naval Air Station at Tateyama in Tokyo Bay has been completed and is now in use.

## **NETHERLANDS**

New Construction.—In spite of Socialist opposition, the Second Chamber of the States General has adopted the Bill authorising the construction of one cruiser and two sloops for the naval forces in the Dutch East Indies.

New Destroyers.—The destroyer "Banckert" has completed her trials, and been taken over by the Ministry of Defence at Rotterdam. The destroyer "Van Nes" attained a speed of approximately 35 knots in the course of full speed trials carried out on the measured mile off the Scottish coast.

#### SOVIET UNION

Warships for the Black Sea.—In a message dated 10th December, the Riga Correspondent of the Morning Post stated that the Soviet battleship "October Revolution" (ex "Gangut") was preparing to leave Kronstadt for the Black Sea as soon as there were signs of the Gulf of Finland beginning to freeze. The frozen gulf was considered to be an adequate defence for Kronstadt, and to make it unnecessary to keep a large fleet there. Two other battleships of the same type, added the correspondent, are to undergo a thorough overhaul until the Spring, when they may be also transferred to the Black Sea, as it is considered that strengthened artillery and torpedo defences at Kronstadt will obviate the danger of an attack upon Leningrad from the sea, even if there is no considerable fleet in the Gulf of Finland. While Soviet battleships can be used in active operations in the Black Sea, it is not considered probable that there would be much use for them in the Baltic.

MEDITERRANEAN CRUISE.—A squadron consisting of the cruiser "Chervonaya-Ukraina" and the destroyers "Shaumyan" and "Nezamozhny" which, as reported in last quarter's Journal, had been engaged on a cruise in the Mediterranean last Autumn, visited Messina and Phalerum Bay, afterwards returning to the Black Sea.

NAVAL MISSION TO ITALY.—It is reported that a Naval Mission, conducted by Admiral Sivkoff, visited Orlando's Yard at Leghorn in the Autumn of last year. They inspected the Argentine cruiser "25 de Mayo" and the Italian cruiser "Gorizia," and Orlando's workshops. Later they visited the Royal Naval Academy, where they were welcomed and taken round the College by Admiral Cavagnari. The Mission afterwards went to Spezia and visited the Royal Dockyard and local defences and torpedo craft.

#### UNITED STATES

THE 1931 CONSTRUCTION PROGRAMME.—On 8th December, Mr. Adams, Secretary of the Navy, laid before Congress the naval programme for the financial year 1931-32. It provides for:—

One 6-inch gun 10,000-ton cruiser with a deck for 25 to 40 aeroplanes, to cost £4,150,000.

One 6-inch gun 7,500-ton cruiser for experimental purposes, to cost £3,200,000. Eleven destroyers, already authorized, costing £9,400,000.

Four submarines, costing £3,500,000. One aircraft-carrier, costing £5,530,000.

The eleven destroyers will include one flotilla leader of 1,850 tons, costing £1,000,000, while the remainder will be of 1,500 tons. The aircraft carrier will be of 13,800 tons, and although much smaller than the "Lexington" and "Saratoga," will carry 114 aeroplanes.

BATTLESHIP MODERNIZATION.—On 8th December also the Senate passed a Bill authorizing the expenditure of £6,000,000 on the modernization of the battleships "New Mexico," "Mississippi," and "Idaho." The Naval Affairs Committee represented that this expenditure was necessary if thousands were to be prevented from losing jobs in the Navy yards. The Committee also stated that the modernization was in accordance with the understanding reached with Great Britain at the London Conference.

Modernization will include the removal of submerged torpedo tubes and the installation of above-water tubes.

10,000-TON CRUISERS.—The following is the present situation in regard to 10,000-ton 8-inch cruisers:—

Built: "Salt Lake City," "Pensacola," "Chester," "Houston,"
"Northampton."

Building: "Louisville," "Chicago," "Augusta," "Portland," "Indianapolis," "New Orleans," "Astoria," "Minneapolis" and light cruiser No. 38 (not yet named).

Cruiser No. 38, which under the terms of the London Naval Conference may be commenced forthwith, is to be built by the Navy Yard, Mare Island, California. It will be the first of the second series of five ships authorised by the programme of the 13th February, 1929. The cruisers Nos. 39, 40, 41 may be laid down in 1933, 1934 and 1935 respectively, and completed within three years of these dates,

Installation of Talking Films.—Congress has voted the necessary money for talking films to be installed in approximately 200 vessels of the U.S. fleet. Contracts have been made with twelve firms for the supply of these films at the same cost as silent pictures.

#### RE-ORGANIZATION OF THE FLEET.

The inauguration of the programme drawn up by Admiral Pratt, Chief of Naval Operations, for the re-organization of the fleet is to be put into effect as soon as possible. It is claimed that this will result in a reduction in personnel of 4,800 men, in ships of 120,000 tons, and a saving of over 11,000,000 dollars:—

Battle Fleet.—Eight of the latest battleships will be placed in two divisions of four ships each, leaving the "California" as Battle Fleet Flagship. All these nine ships will have thirty degrees elevation for their turret guns, giving them an extreme range of 35,000 yards.

The third division will consist of the "New Mexico" (flagship), "Texas" and "New York," and will have fifteen degrees elevation for their turret guns. The "Idaho" and "Mississippi" will be undergoing partial modernization, but there will be a minimum of twelve battleships in commission at all times.

Training Squadron.—The old battleships "Arkansas" and "Wyoming," with two destroyer flotillas, are being formed into a Training Squadron which will be commanded by Rear-Admiral H. H. Christy and will operate off the Atlantic coast.

Cruisers.—The Scouting Fleet in the Atlantic will comprise the new 10,000-ton cruisers and attendant destroyers. The 6-inch gun cruisers will be sent to the Pacific, a division at a time, as the new big cruisers are commissioned; but for the time being practically all the ten 7,750-ton 6-inch gun cruisers of the "Omaha" class will remain with the battle fleet and operate with the aircraft carriers "Saratoga" and "Lexington."

Aircraft Carriers.—In future the aircraft carriers will be formed into two divisions under the command of a "Commander, Carrier Divisions, United States Fleet."

Division I. "Langley" and the aircraft tenders, "Wright," "Sandpiper" and "Teal."

Division 2. "Saratoga," "Lexington" and aircraft tender, "Gannet."

Destroyers.—Sixteen destroyers are to be paid off and placed in reserve, and two mine-laying destroyers are to be paid off for disposal. The total destroyer tonnage in commission will then be reduced to about 93,000 tons. Future destroyers are to be of 1,500 tons, and flotilla leaders 1,800 tons. Destroyer divisions are to consist of four instead of six boats.

Mining Force.—The existing two mining squadrons are to be re-organized into one squadron consisting of a division of light mine-layers and a division of mine sweepers. The mine-layer "Oglala" will be flagship, and together with the mine-layers "Lansdale" and "Lucy," the mine sweepers "Lark" and "Quail" will be withdrawn from the Atlantic and based in future at Pearl Harbour to operate with the battle fleet. The naval aircraft at Pearl Harbour will be attached to the Commander of the Mine Force.

Submarines.—Twenty-five submarines will be paid off leaving fifty-five of these craft in commission, with a total tonnage of about 51,000 tons.

Major-Greend H. W. Newmon von Control of the last elected

# ARMY NOTES

#### HOME

APPOINTMENTS AND PROMOTIONS.—H.M. the King has approved of the appointment of Colonel (temporary Brigadier) C. C. Armitage, C.M.G., D.S.O.; Colonel (temporary Brigadier) W. J. N. Cooke-Collis, C.B., C.M.G., D.S.O.; Colonel (temporary Brigadier) Sir Hereward Wake, Bt., C.M.G., D.S.O.; and of Colonel (temporary Brigadier) E. D. Giles, C.M.G., D.S.O., Indian Army, as Aides-de-Camp to the King.

H.M. the King has approved of the appointment of Lieutenant-Colonel (temporary Colonel) W. P. MacArthur, D.S.O., O.B.E., Royal Army Medical Corps; and Colonel C. L. Thornton, M.C., Royal Army Medical Corps, as Honorary Physicians to the King; also of Lieutenant-Colonel J. McPherson, M.B., F.R.C.S.Edin., and Major-General J. D. Graham, C.I.E., M.B., Indian Medical Service, as Honorary Surgeons to the King.

H.M. the King has approved of the appointment of Major-General A. Solly-Flood, C.B., C.M.G., D.S.O., Colonel, The Prince of Wales's Volunteers (South Lancashire), as Colonel of the 4th/7th Dragoon Guards; of Colonel (temporary Brigadier) J. Vander Byl, D.S.O., as Colonel of the 8th King's Royal Irish Hussars; of Lieutenant-General Sir Alexander E. Wardrop, K.C.B., C.M.G., and Lieutenant-General Sir Percy P. de B. Radcliffe, K.C.B., K.C.M.G., D.S.O., as Colonels Commandant, Royal Regiment of Artillery; of Major-General A. E. W. Harman, C.B., D.S.O., as Colonel of the Queen's Bays (2nd Dragoon Guards); of Major-General Sir C. C. Maynard, K.C.B., C.M.G., D.S.O., as Colonel of The Devonshire Regiment; of Brigadier-General H. Haggard as Colonel of The East Yorkshire Regiment.

The following appointments are announced:—Lieutenant-General Sir A. E. Wardrop, K.C.B., C.M.G., to be Quartermaster-General, India Headquarters Staff;

Major-General H. K. Bethell, C.B., C.M.G., C.V.O., D.S.O., to be Commander, Presidency and Assam District, Eastern Command, vice Major-General H. E. ap Rhys Pryce, C.B., C.M.G., D.S.O., Indian Army.

Major-General H. E. ap Rhys Pryce, C.B., C.M.G., D.S.O., Indian Army, has been appointed Commander, Deccan District, vice Major-General B. F. Burnett Hitchcock, C.B., D.S.O.

Major-General W. J. Dugan, C.B., C.M.G., D.S.O., to be Commander, 46th (North Midland) Division, Territorial Army, in succession to Major-General Sir Percy Hambro, K.B.E., C.B., C.M.G., with effect from 15th May, 1931.

Major-General H. W. Newcome, C.B., C.M.G., D.S.O., has been selected for the appointment of Commander of a District (first class) in India, and will be succeeded by Major-General L. H. R. Pope-Hennessy, C.B., D.S.O., as Commander of the 50th (Northumbrian) Division, Territorial Army.

Major-General R. L. B. Thompson, C.B., C.M.G., D.S.O., has been appointed Director of Works, War Office, with effect from 21st June, 1931, vice Major-General P. G. Grant, C.B., C.M.G.

General Sir Charles H. Harington, G.B.E., K.C.B., D.S.O., D.C.L., Colonel, The King's Regiment, Colonel Commandant, Army Educational Corps, Aide-de-Camp General to the King, to be General Officer Commanding-in-Chief, Aldershot Command, in succession to General Sir David Campbell, K.C.B., Colonel, 9th Lancers, with effect from 30th June, 1931.

Lieutenant-General Sir Torquhil G. Matheson, K.C.B., C.M.G., to be General Officer Commanding-in-Chief, Western Command, India, in succession to General Sir Charles Harington.

The following promotions have been made:-

To be Lieutenant-General:—Major-General Sir J. D. Jeffreys, K.C.V.O., C.B., C.M.G.; Major-General T. A. Cubitt, C.B., C.M.G., D.S.O.

To be Major-General:—Colonel O. C. Borrett, C.B., C.M.G., C.B.E., D.S.O.; Colonel R. G. Finlayson, C.M.G., D.S.O.; Colonel S. B. Pope, C.B., D.S.O. (Indian Army); Colonel G. H. N. Jackson, C.B., C.M.G., D.S.O.; Colonel J. G. Dill, C.B., C.M.G., D.S.O.

ROYAL ARMY SERVICE CORPS: REORGANIZATION.—It has been decided to abolish the distinction in nomenclature between the Horse Transport and Mechanical Transport Branches of the Royal Army Service Corps, and to use the expression Transport only. Separate enlistments for the Horse and Mechanical Transport Branches will cease, and in future enlistments will be for the Transport Branch of the Royal Army Service Corps for a period of six years with the Colours and six years with the Army Reserve.

ROYAL TANK CORPS: FULL-DRESS UNIFORM FOR OFFICERS.—A full-dress uniform for officers of the Royal Tank Corps has been approved. The introduction of this uniform will affect, for the present, only those officers of the Corps who desire to obtain full-dress uniform for wear at Levees, etc.

Details of the uniform are as follow:-

Tunic.—Blue cloth, body lined drab, skirt lined black; collar of black velvet ornamented with \$\frac{1}{4}\$-inch gold staff lace at the top and gold Russia braid at the bottom. Black velvet pointed cuffs, 3\$\frac{1}{4}\$ inches in front and 2 inches at back, trimmed with an Austrian knot in gold wire cord, top of Austrian knot 8\$\frac{1}{2}\$ inches to bottom of cuff; eight buttons down the front. The skirt closed behind with a three-pointed slash at each side, edged with gold wire cord and a button at each point. Twisted round gold shoulder cords, lined blue, with small button of Corps pattern at the top. Gilt and silver collar badges, silver embroidered badges of rank.

Overalls,—Blue cloth, with black mohair staff pattern lace stripe 2 inches wide down each side seam.

Headdress.—A black beret, gilt and silver badge, with a flash in Corps colours behind. The flash is made of horse hair in equal parts, green, red and brown, 2 inches deep, ‡ inch wide at base, 1½ inches spread at the top.

Sash.—Gold and black silk net, 2½ inches wide; backed with black leather; two gold stripes, ½ inch wide, the rest black; round tassels of gold and black silk fringe, 8½ inches long.

Sword belt .- Black web.

Sword slings.—Gold lace,  $\frac{7}{8}$  inch wide, special pattern with  $\frac{3}{32}$  inch black silk stripe in the centre on straight grain black seal leather r inch wide, flat billets; plain square gilt buckles slightly rounded at the corners.

Sword knot.-Gold and black strap, with gold and black acorn.

Boots .- Wellington.

ARMY RECRUITING.—Throughout January, the normal system whereby recruits are grouped into Training Squads, by areas, has been held in abeyance, and all men offering themselves for enlistment in the Infantry were given a free choice of Regiment and posted to whatever unit they select.

MECHANICAL ENGINEERS FOR THE ARMY.—Vacancies exist for Commissions in the Supplementary Reserve of Officers as Ordnance Mechanical Engineers in the Royal Army Ordnance Corps.

In addition to qualifications as to character, medical fitness, nationality, etc., candidates must be under thirty years of age for appointment as Subalterns, and under thirty-five for appointment as Captains, and must also be fully qualified Mechanical Engineers. Preference will be given to Bachelors of Science (Engr.), Whitworth Scholars, Graduates and Associates of the Institutions of Civil, Mechanical or Electrical Engineers. Candidates will not be required to undergo training in peace-time but will be liable to be called out on service when the Army Reserve or any part of it is called out by Proclamation, and to serve in any part of the world. In return for their obligation, officers will be granted an annual gratuity of £25, payable in arrear. When called out on service, they will receive the rates of pay and allowances applicable to officers holding similar appointments in the Regular Army, and in addition will receive an outfit grant of such amount and under such conditions as it may be decided to issue to officers commissioned temporarily during the emergency.

Long Service and Good Conduct Medal.—Royal Warrant, dated 23rd September, 1930, deals with the Medal for Long Service and Good Conduct (Military) for whole-time service of soldiers in regular or permanent forces throughout the Empire. The existing regulations governing the award of the Medal for Long Service and Good Conduct to soldiers of the Regular Army at home are contained in the King's Regulations and the Royal Warrant for the Pay, etc., of the Army, and the grant of similar medals to soldiers of the permanent forces of the Dominions, Colonies and India is governed by a Warrant of her late Majesty Queen Victoria, dated 31st May, 1895. The conditions of award, however, are not identical throughout the Empire, whilst the designs of the Medals and the ribbons vary. The purpose of the new Royal Warrant is therefore to provide for the grant of a Medal under standardized conditions for soldiers of all the permanent military forces throughout the Empire.

The Medal, which is similar to the existing Medal for Long Service and Good Conduct for the Regular Army at home, is of silver with the Royal and Imperial Effigy on the obverse and the inscription "For Long Service and Good Conduct" on the reverse: the ribbon is crimson, edged white. The Medal will bear a subsidiary title denoting the force in which the recipient qualified for the Medal, and this will be inscribed on a bar attached to the mount of the Medal. The Medal will be awarded to warrant officers, non-commissioned officers and men of the Regular Army and other Permanent Forces of the Empire who complete

eighteen years' service as defined in regulations, and whose characters and conduct have been irreproachable and who are recommended by their Commanding Officers. There will be separate regulations in amplification of the Royal Warrant for each of the forces concerned.

Voluntary Aid Detachments.—The latest official returns of the progress made in the organization of Voluntary Aid Detachments, show that 103 Men's and 880 Women's Detachments, comprising a total membership of 24,676, have received recognition by the War Office. This is an increase of 40 detachments and 1,100 members during the past twelve months. On the present membership, 5,006 have taken the "mobile" obligation; this is an increase of 600 during the year. The "mobile" women members of the categories of Nursing Member, Hospital Cook and Clerk are required, unless specially exempted, to attend for eight days once every three years a course of training in a Naval, Military or Air Force Hospital, and during the present year 747 have attended.

The County areas in England, which have a total membership of 500 or over, are as follows:—Norfolk, 1,593; County of London, 1,485; East Lancashire, 1,397; Yorkshire (West Riding), 958; 'Devonshire, 879; Hampshire, 818; Yorkshire (North Riding), 786; Somerset, 735; Surrey, 674; West Lancashire, 669; Cheshire, 627; Sussex, 614; Essex, 613; Kent, 587; Lincolnshire, 532; and Nottinghamshire, 517. In Scotland there are 143 Detachments, with a total membership of 3,676, of whom 974 are "mobile" members. There are 53 Detachments in Wales, the total membership being 1,459, of whom 219 are "mobile" members.

The present scheme for Voluntary Aid Detachments was inaugurated in 1923 and is designed to supplement the medical services of the Naval, Military and Air Forces in time of war. "Mobile" members are required to give an undertaking that, in the event of the embodiment of the Territorial Army, they are prepared to serve with the medical services either at home or abroad. "Immobile" members undertake to serve within reach of their own homes.

#### THE ARMY IN INDIA

NEW CHIEF OF STAFF.—The appointment of Lieutenant-General Sir K. Wigram, K.C.B., C.S.I., C.B.E., D.S.O., as Chief of the General Staff in India, vice Lieutenant-General Sir C. J. Deverell, K.C.B., K.B.E., with effect from 21st March, 1931, has been approved.

#### TERRITORIAL ARMY

New Efficiency Decoration and Medal.—Hitherto there have existed three separate Decorations and five Medals which may be awarded to officers and other ranks of these forces, viz.:—The Territorial Decoration and the Territorial Efficiency Medal; The Colonial Auxiliary Forces Officers' Decoration and the Colonial Auxiliary Forces Long Service Medal; The Volunteer Officers' Decoration and the Volunteer Long Service Medal; The Special Reserve Long Service and Good Conduct Medal; and the Militia Long Service Medal.

The conditions of award have varied considerably and caused difficulties in administering the regulations for the grant of the various awards. It has been thought desirable to reduce the number of these Decorations and Medals and the new Decoration and Medal have been instituted to provide in substitution throughout the Empire one Decoration and one Medal only for long and efficient

service in auxiliary forces, with standardized conditions of award, and to recognize thereby the Imperial character of such service. The new Decoration and Medal are to be styled "The Efficiency Decoration" and "The Efficiency Medal."

The design of the Efficiency Decoration, which is similar to the existing Territorial Decoration, consists of an oak wreath in silver tied with gold, having in the centre the Royal Cipher and Crown in gold; the riband is green with a yellow stripe down the centre. The Decoration will bear a subsidiary title to denote the force in which the recipient qualified for the award of the Decoration, and this subsidiary title will be inscribed on the bar-brooch from which the Decoration is suspended. The service required to qualify for the Decoration is twenty years' commissioned service on the active list of the forces mentioned, but, as defined from time to time in regulations, half the time spent in the ranks may count, and war service may reckon two-fold. Officers on whom The Volunteer Officers' Decoration, The Territorial Decoration, or The Colonial Auxiliary Forces Officers' Decoration has already been conferred, may not count any service, in the force in which they qualified for any of these Decorations, as qualifying service for The Efficiency Decoration. Officers of the Territorial Army who are awarded the Decoration will be entitled to the letters "T.D." after their names, like those at present awarded The Territorial Decoration, and officers of other Auxiliary Military Forces throughout the Empire, will be entitled to the letters "E.D." Separate regulations, in amplification of the Royal Warrant, will be made for the Territorial Army and for the Auxiliary Military Forces of each of the Dominions, Colonies, Protectorates and India.

The Efficiency Medal is of silver, oval in shape, with the Royal and Imperial Effigy on the obverse and the inscription "For Efficient Service" on the reverse; the ribbon is green with yellow stripes down the edges. The subsidiary title denoting the force in which the recipient qualified for the award of the medal will be inscribed on the mount of the Medal. The Medal will be awarded to warrant officers, non-commissioned officers and men of the Militia, the Territorial Army, or other Auxiliary Military Forces throughout the Empire, who complete twelve years' efficient service, and Clasps will be awarded on completion of eighteen years' and 24 years' service. The service qualifying for the Medal and Clasps must be continuous, except in special circumstances provided for in the Royal Warrant or defined in the regulations. The award of the Medal or Clasps will not entitle recipients to the addition of any letters after their names. Separate regulations will be made in amplification of the Royal Warrant, as in the case of the Decoration.

#### DOMINION FORCES

REGIMENTAL ALLIANCES.—H.M. the King has approved of The Canadian Grenadier Guards, Non-Permanent Active Militia of Canada, being allied to the Grenadier Guards of the British Army; of the 37th Battalion, Australian Infantry, Australian Military Forces, being allied to The Queen's Own Cameron Highlanders; of the 48th Battalion, Australian Infantry, Australian Military Forces, to The Northamptonshire Regiment; of the 49th Battalion, Australian Infantry, Australian Military Forces, to The Royal Berkshire Regiment (Princess Charlotte of Wales's).

## CANADA

CADETS: THE EARL GREY CHALLENGE TROPHY COMPETITION.—This Trophy, presented by Earl Grey when Governor-General of Canada, is awarded annually

to the Province which can show on Parade at the Annual Inspection (which must be held on or before the 31st August each year) the greatest number of enrolled Cadets between the ages of twelve and eighteen years in proportion to the number of boys attending school during the previous school year; the Statistics regarding school attendance to be obtained from the Executive Council, Strathcona Trust.

Danulto	1030.—These	wagniles are	0.0	follows:
RESTAILS.	TO CO I HESE	resuits are	0.5	TOHOWS

70

lal

ng

ng a to n, he is d, ks er es he or he at гу te al es,

al

e :

le

al

nt

y, ve

st

nt le

ns

n.

ın

he

y,

3 :

he

ın

5).

dollar dollar		Cadets 12 to 18	by this new sea	THOOL THEFORE
Province.	.posis	years, present at Annual	Boys attending School, School	Percentage of Cadets to Boys
		Inspection.	Year 1928-29.	attending
		1930.	North designed	School.
Quebec	To lead	 64,359	278,038	23.15
British Columbia	1.	 5,872	55,309	10.62
Ontario	P. Tollar	38,601	372,179	10.37
Prince Edward Isl	land	 774	8,740	8.86
Alberta		 5,851	81,423	7.19
Nova Scotia		3,299	56,142	5.88
New Brunswick		 2,309	39,594	5.83
Saskatchewan	** 1	 4,293	114,043	3.76
Manitoba	400 00	 2,749	75,258	3.07
		Linespeer esw	Talk to Tourist	the S <del>pinsery</del> John
		128,107	1,080,726	han hereigt ode

The Shield, having been awarded to the Province of Quebec, will be held in Military District No. 4 for a period of five months, by No. 30, Mount St. Louis Cadet Regiment, Montreal, P.Q., and in Military District, No. 5 for a similar period by No. 352, The Commercial Academy Cadet Corps, Quebec, P.Q., these Units having been found the most efficient in physical training, military drill, small arms training, signalling, first aid and appearance, in their respective Districts.

# FOREIGN FRANCE

# DEATH OF MARSHAL JOFFRE

Marshal Joffre died in Paris on 3rd January at 8.20 a.m. He had been ill since early in December, and had suffered amputation of the right leg on 19th December. His condition thereafter remained critical, but his vigorous constitution caused him to outlive the time allotted to him by his doctors. He died unconscious.

Joseph Jacques Césaire Joffre was born at Rivesaltes (Pyrenées Orientales), on 4th January, 1852, the year of the birth of the Earl of Ypres. His father was of humble origin, and was a cooper. He entered the Ecole Polytechnique in 1869. In 1870 he fought in the Franco-Prussian War as a 2nd Lieutenant of artillery, serving through the siege of Paris. He then transferred to the Engineers. He lost his first wife in 1885, and thereupon volunteered for service in the colonies. In 1888 he served at the Ministry of War in Paris, and in 1889 became Professor of Fortification at Fontainebleau. In 1892 he was sent to West Africa to construct railways, but there distinguished himself by capturing Timbuctoo. In 1896 he was ordered to Madagascar to construct the defences of the port of Diego-Suarez. In 1901 he returned to France, on promotion to Brigadier-General, and became

Director of Engineering at the Ministry of War. From that office he was selected to command the 6th Division, and subsequently the IInd Army Corps at Amiens. In 1910 he became a member of the Conseil Supérieur de la Guerre. In 1911 he was nominated vice-president of that council and so was automatically designated Commander-in-Chief of the French Forces in the event of war. It is an open secret that his selection to that office, and his subsequent attitude, were largely brought about by the new school of the General Staff which championed the offensive qualities of the French troops. This group was nicknamed the "Young Turks" and headed by one Colonel de Grandmaison.

As a result of his elevation to his new position he endorsed the details of the notorious Plan XVII, designed to withstand the probable German invasion of France, which his predecessor, General Michel, had refused to accept. By so doing he was unknowingly courting disaster. The resulting situation as it developed in 1914, was the unfortunate Battles of the Frontier, the defeat of the French Armies all along the front, and finally the Great Retreat. Plan XVII lay shivered to atoms and France was exposed to crushing defeat.

But thanks to the German blunders, huge losses and march wastage, no less than to their own strategic insight and recuperative powers, the French high command, with some perspicacity, and aided by good fortune, succeeded in retrieving their perilous situation. The dispute as to whether Joffre or Galliéni, the Military Governor of Paris, was responsible for the actual decision to stay the retreat and to resume the offensive matters little to us. To Joffre belongs the credit of having shouldered the responsibility and having issued the necessary orders for the whole of the Battle of the Marne. As such his reputation will go down to posterity.

After the Marne, Joffre was not quite so lucky. His attempts at breaking the German front all miscarried, while his desires that the British Army should take a full share of the Allied offensive led to failure. The British, indeed, in view of their material weakness, could but undertake such fruitless attacks as at Loos. Then came Verdun. Here Joffre was undoubtedly fortunate once more in that the fortress withstood the fierce German onslaught, in spite of his having originally denuded that sector of his front both of troops and of the guns of the forts. The Somme did not add to his prestige. Finally, at the close of 1916, he was relieved by a younger, more brilliant, general who had a "good press" and carried with him the hopes of his country but who failed ignominiously; yet Joffre said nothing, and spent the remainder of the war in doing good service to his country, visiting the United States and other countries. He continued to be active in Paris at the supreme direction of the war. To the end the slowthinking, placid, shrewd qualities that he had exhibited at the outbreak of war remained an asset to France. In December, 1916, he was promoted Marshal of France, the first soldier to reach that dignity since the days of Sedan in 1870.

The official funeral took place on 7th January. Great Britain was represented by the British Ambassador in Paris, two Field-Marshals and several other highly placed officers. The coffin was taken to Les Invalides where it was to lie until committed to the earth in the Marshal's own garden at Louveciennes, where he desired to rest.

# EULOGY OF MARSHAL FOCH.

Maréchal Pétain on taking his seat in the Académie Française, to which had been elected in the place of Marshal Foch, on 22nd January, 1931, pronounced

a long eulogy of the deceased Marshal's services to the Allied cause. The discourse is reproduced in full in *Le Temps* for 23rd January, 1931.

#### ANNUAL CONTINGENT.

The following Table gives the numbers and distribution by arms of the service of the annual class of conscripts called to the colours during the year May, 1929—April, 1930:—

					May	October	April
					1929	1929	1930
Total number of con-	script	s called	up		74,562	86,685	98,893
Rejected as medicall	y unf	it—					light.
Permanently					1,795	1,505	961
Temporarily		4.			2,785	2,321	2,038
Normal wastage					About 5	per cent. eve	ery 6 mths.
Distribution among	the	different	arm	<u>-</u>			
Infantry and Tan	ks				36,462	42,869	49,627
Cavalry		1447 10			5,526	7,530	9,342
Artillery		1		100	15,647	18,257	21,232
Engineers					5,908	5.744	5,661
Train (Transport)					2,189	1,946	2,191
Supply Service					698	877	930
Medical Service					946	1,239	1,191
Aviation					5,088	5,725	7,186
Colonial units					2,098	1,508	1,533
	Rejected as medically Permanently Temporarily Normal wastage Distribution among Infantry and Tank Cavalry Artillery Engineers Train (Transport) Supply Service Medical Service Aviation	Total number of conscript Rejected as medically unf Permanently Temporarily Normal wastage Distribution among the Infantry and Tanks Cavalry Artillery Engineers Train (Transport) Supply Service Medical Service Aviation	Total number of conscripts called Rejected as medically unfit— Permanently Temporarily Normal wastage Distribution among the different Infantry and Tanks Cavalry Artillery Engineers Train (Transport) Supply Service Medical Service Aviation	Total number of conscripts called up Rejected as medically unfit— Permanently Temporarily Normal wastage Distribution among the different arms Infantry and Tanks Cavalry Artillery Engineers Train (Transport) Supply Service Medical Service Aviation	Total number of conscripts called up  Rejected as medically unfit— Permanently Temporarily  Normal wastage  Distribution among the different arms— Infantry and Tanks Cavalry Artillery Engineers Train (Transport) Supply Service Medical Service Aviation	May   1929   Total number of conscripts called up   74,562   Rejected as medically unfit—  Permanently   1,795   Temporarily   2,785   Normal wastage   About 5   Distribution among the different arms—  Infantry and Tanks   36,462   Cavalry   5,526   Artillery   15,647   Engineers   5,908   Train (Transport)   2,189   Supply Service   698   Medical Service   946   Aviation   5,088	May October   1929

## GERMANY

DISCIPLINE.—On the conclusion of the recent trial at Leipzig of two army officers and an ex-officer, the Reichswehr Minister, General Groener, addressed the following circular to all officers:—

BERLIN, 6th October, 1930.

On the 4th October, 1930, the Supreme Court in Leipzig pronounced the following sentence on 2nd Lieutenants Scheringer and Ludin and Lieutenant (retired) Wendt:

The accused are sentenced to 18 months fortress imprisonment and ordered to pay the costs of the trial for joint conspiracy in preparing a treasonable enterprise. The period of six months and three weeks spent in custody to count towards the sentence. Ludin and Scheringer are to be dismissed the service. Scheringer is acquitted on the other counts of the charge.

In passing this sentence the President of the Court emphasized, among other things, that the condemned officers had been animated by noble motives in committing the regrettable offence, and that they had been inspired by patriotism. In spite of this, however, the Court made no allowance for extenuating circumstances and laid particular emphasis on the fact that it is impossible in the German Army to have subalterns undertaking journeys for propaganda purposes, no matter on behalf of what party.

I have to make the following considered observations on the case:-

I. The Reichswehr must essentially be, and is, in the highest degree, national. When, however, young officers who possess no other qualification besides their youth, reproach their superiors and therefore the Supreme Commander of the Reichswehr, President Hindenburg, (who has the deciding voice in all matters of national policy) with a lack of national sentiment, and arrogate to themselves the right to decide what is or is not national, their action can only be described as unparalleled insolence, revealing a regrettable lack of the sense of authority.

2. It is a fact that the chief task of the Reichswehr is the protection of our Fatherland against outside aggression, and it is the self-evident duty of the responsible heads to do everything possible to carry out this task. It is, however, pure presumption on the part of young officers, revealing an astonishing over-estimate of their own powers of discernment, when such men, who are not in a position to appreciate foreign political and financial possibilities, speak of inadequate measures for the protection of the country taken by the High Command, and go so far as to criticize them in public.

3. The Reichswehr stands for the State, and is above all parties. It must unconditionally be kept outside party strife and the political influences of the day. Consequently there can be no leaning towards left or right. All military-political measures taken and orders issued are dictated from this point of view only. When, however, young officers believe it to be their duty to combat what they consider to be tendencies towards the left in the command of the Reichswher, it indicates complete failure on their part to recognize the actual state of things.

The usual channels are open to them in case they desire to approach their highest superiors and put forward their objections to any orders or measures they do not understand. It is the state of mind prevalent since the war which leads every young officer to believe himself entitled to criticize all orders issued by the High Command, and to demand the why and wherefore of each measure taken.

4. The strength of every armed force depends on unconditional and implicit obedience. Soldiers who, before carrying out orders, ask themselves whether these orders are in conformity with their own views, are not worth their salt. Such questioning is the first step to mutiny and the dissolution of the Reichswehr, and, if allowed to continue, would lead to each man turning his hand against his neighbour. It was a blot on the scutcheon of the Reichswehr when young officers voiced such thoughts before the Supreme Court.

5. It is obvious that officers holding such views cannot remain in the Reichswehr. I therefore expect of every officer who possesses a sense of honour and has the courage to tell the truth, that he will at once send in his papers in case he subscribes to such opinions.

6. This order is to be brought to the notice of every officer and at the same time the order concerning the preliminaries to the trial is to be recalled to mind.

The carrying out of this order will be reported to the Reichswehr Ministry by 1st November, 1930.

(sd.) GROENER.

#### SPAIN

REDUCTION OF COMPULSORY SERVICE TO ONE YEAR.—A decree reducing the period of compulsory military service was published on 21st August, 1930. It amends the Recruiting Law of March, 1924.

A résumé of the main points of the text of this decree, in so far as existing regulations are amended, follows:—

I. Annual contingent.

- (a) The annual contingent for the Army and Marine Infantry will be constituted by all men enrolled in the respective year. These will be divided into five groups, viz.:—
  - (1) Men fit for all military service.
  - (2) Men fit for auxiliary services only.

(3) Exempt.

(4) Temporarily exempt.

(5) Profugos (men who fail to report).

(b) Men of the annual contingent declared fit for all service, and those of former enlistments attached to the year's contingent, will be divided into two groups as follows:—

(I) Active service contingent, formed of men who are to constitute the permanent effectives on a peace footing of the armies of the Peninsula, adjacent islands and garrisons in North Africa.

(2) Instruction contingent, formed of men who, having only to receive general and reduced instruction, will be incorporated only when ordered by the government.

2. Military situations.

Military service from the time of classification continues to cover eighteen years; the categories are as follows:—

(1) Active service, twelve months.

(2) "Disponible" (i.e., available for active service), five years.

(3) 1st Reserve, six years.

(4) 2nd Reserve, remainder of period to complete eighteen years.

The Government may, by means of a decree, increase to eighteen months the duration of active service in North Africa and the Sahara.

3. Distribution and incorporation.

The posting of recruits to the army in Africa, to the Peninsula Army and to the Instruction Contingent will be effected by means of a public ballot.

(a) Active service contingent.—The total number of the year's active service contingent will be fixed each year by the Minister of the Army in the month of September. These recruits will be incorporated as follows:—

By 1st November: (a) Half of the annual group destined for service in Africa, and

(b) One-third of those destined for service in the Peninsula and adjacent Islands.

By 1st February: (c) The second half of (a) above, and

(d) The remaining two-thirds of (b) above.

These dates may be altered by Government decision.

(b) Instruction Contingent.—Men belonging to the Instruction Contingent will remain in their homes until their incorporation is ordered. After incorporation they will receive elemental instruction for a maximum period of three months.

4. Discharge.

- (a) The first group of the annual contingent will be discharged at the end of October.
  - (b) The second group, at the end of January.

5. Volunteers.

Volunteers will continue to be admitted to the army, but the minimum engagement is reduced to two years.

The maximum number of volunteers admitted to a unit may not exceed one-tenth of its organic establishment.

Cuota recruits (i.e., those of education and means exempted from full term by payment).

These will serve in the ranks for six months. They will be incorporated in February with the second part of the year's contingent.

Cuota recruits will not take part in the general ballot; they may, within certain conditions, choose the corps in which they are to serve.

- 7. Men possessing pre-military instruction in gymnastics and musketry, as also those who have been boy scouts for three years, will only be required to undergo eight months' active service.
- 8. Provided that they obtain the consent of the Captain-General of their Region, men on active service will be permitted in future to contract marriage.

The precepts of this decree will be applied fully to the contingent of 1931.

In the meantime, however, the provisions contained in paragraphs Nos. 2, 3, 6 and 7 of this memorandum will be applied to the contingent of 1930, the first part of which will be incorporated in November next.

# AIR NOTES

# ROYAL AIR FORCE

#### APPOINTMENTS.

AIR COMMODORES.—The Hon. J. D. Boyle, C.B.E., D.S.O., to Headquarters, Fighting Area, to command (temporarily) vice Air Vice-Marshal H. C. T. Dowding, C.B., C.M.G. (appointed to Air Council¹), to date 1st September, 1930; P. F. M. Fellowes, D.S.O., to No. 23 Group, Headquarters, on appointment as Air Officer Commanding, vice P. B. Joubert de la Ferté, C.M.G., D.S.O. (appointed Commandant, R.A.F. Staff College¹), to date 7th September, 1930; W. R. Freeman, D.S.O., M.C., to Headquarters, Iraq Command, as Chief Staff Officer, to date 9th October, 1930.

GROUP CAPTAINS.—C. E. H. Rathborne, D.S.O., to Headquarters, Inland Area, as Chief Staff Officer, to date 22nd September, 1930; G. I. Carmichael, D.S.O., A.F.C., to Station Headquarters, Upper Heyford, in command vice C. E. H. Rathborne, D.S.O., to date 22nd September, 1930; R. H. Verney, C.B.E., to R.A.F. Depot (Inland Area) for Senior Officers' War Course, Greenwich, to date 13th October, 1930; J. R. W. Smyth-Pigott, D.S.O., to Headquarters, Air Defence of Great Britain, as Chief Staff Officer (temporarily), to date 30th October, 1930; E. D. M. Robertson, D.F.C., to Air Ministry as Director of Personal Services, vice Air Commodore P. F. M. Fellowes, D.S.O., to date 10th November, 1930; R. E. C. Peirse, D.S.O., A.F.C., to Headquarters, Coastal Area, supernumerary, pending appointment to Air Ministry (Department of C.A.S.), to date 7th November, 1930; H. M. Cave-Browne-Cave, D.S.O., D.F.C., to R.A.F. Depot (Inland Area), as supernumerary, on transfer to Home Establishment, to date 17th October, 1930.

#### PERSONNEL.

R.A.F. STAFF COLLEGE.—The following officers have satisfactorily completed the eighth course (1930) at the R.A.F. Staff College, and are entitled to "p.s.a." after their names:—

# Royal Air Force.

Wing Commander G. R. M. Reid, D.S.O., M.C.

Squadron Leader H. H. MacL. Fraser.

Squadron Leader G. G. Dawson.

Squadron Leader R. S. Sorley, D.S.O., D.F.C.

Squadron Leader O. R. Gayford, D.F.C.

Squadron Leader F. G. M. Williams (Stores Branch).

Flight Lieutenant C. R. Davidson, M.C.

Flight Lieutenant H. D. O'Neill, A.F.C.

Flight Lieutenant E. I. Bussell.

Flight Lieutenant G. M. Bryer, O.B.E., A.F.C.

<sup>&</sup>lt;sup>1</sup> See Air Notes, R.U.S.I. JOURNAL, November, 1930.

Flight Lieutenant A. B. Ellwood, D.S.C.

Flight Lieutenant S. D. Culley, D.S.O.

Flight Lieutenant A. P. Davidson.

Flight Lieutenant G. M. Knocker.

Flight Lieutenant C. A. Bouchier, D.F.C.

Flight Lieutenant E. S. Burns.

Flight Lieutenant T. G. Bowler (Stores Branch).

#### Dominion Air Forces.

Royal Australian Air Force.

Flight Lieutenant F. M. Bladin.

Flight Lieutenant D. E. L. Wilson.

Royal Canadian Air Force.

Squadron Leader C. M. McEwen, M.C., D.F.C.

Flight Lieutenant G. R. Howsam, M.C.

The following officers of the Royal Navy, Royal Marines and Army have satisfactorily completed the same course:—

Royal Navy.

Commander R. H. V. Buxton.

Lieutenant-Commander W. D. Stephens.

Royal Marines.

Captain G. E. Wildman-Lushington.

Army.

Major W. T. Bird (Indian Army).

Bt. Major A. E. Stokes-Roberts, O.B.E., M.C. (Worcs. Regt.)

FLYING TRAINING.—Since 1st September, 1930, the following have completed course at the Flying Training Units:—

Officers. Airmen.

No. 3 Flying Training School . . 23 7

2 Foreign Officers.
No. 5 Flying Training School . . 25 5 airmen.

#### ARMY CO-OPERATION.

The Army Collective Training Seasons culminated in September with four interesting exercises in the Salisbury Plain area by troops of the Aldershot and Southern Commands, in which the R.A.F. co-operated. These exercises involved the use of highly mobile forces, which were widely separated at the commencement of each exercise. The action of the R.A.F. as regards reconnaissance formed an important feature. Much of the reconnaissance carried out was medium reconnaissance, and the experience gained by the Army Co-operation Squadrons in this type of work was invaluable.

During the first two exercises, experience was also gained in the employment of day bombers against mechanized columns of troops and the use of fighter aircraft in minimising the effect of such bombing.

In addition to the exercises on Salisbury Plain, air co-operation, involving medium and close reconnaissance, artillery reconnaissance, and photography, was

provided during the exercises in Suffolk for which the regular troops of the Eastern Command were concentrated, and during exercises at Catterick in which the regular troops of the Northern Command took part.

Little work was done with Territorial Army Formations during this period as most of their training had been completed before 1st September.

#### ORGANIZATION.

Moves of Units.—The R.A.F. Station at Boscombe Down commenced to function on 3rd November, 1930, when Station Headquarters were formed. No. 9 (Bomber) Squadron moved to this Station from Manston on 26th November, and No. 10 (Bomber) Squadron is due to proceed there, from Upper Heyford, on 5th March next.

On the 14th October, No. 36 (Torpedo Bomber) Squadron was transferred from the Home Establishment to the Far East Command. The establishment of the Royal Air Force Base at Singapore now consists of Base Headquarters, No. 205 (F.B.) Squadron and No. 36 (T.B.) Squadron.

# BALTIC CRUISE.

Four Southampton flying boats of No. 201 (F.B.) Squadron under the command of Group Captain E. R. C. Nanson, C.B.E., D.S.O., A.F.C., left Felixstowe on 3rd September on a summer training cruise to Scandinavia, Poland and the Baltic States. The Squadron, after visiting the most important Baltic Ports, returned to Felixstowe on the 2nd October. With the exception of a slight delay to one of the aircraft at Esbjerg, the cruise was carried out according to programme.

# ADEN

A flight of three Fairey IIIF aircraft of No. 8 (B) Squadron under the command of Squadron Leader J. L. Vachell, M.C., paid a visit to Addis Ababa on the occasion of the coronation of Ras Taffari, the Emperor of Abyssinia. The aircraft left Aden on 27th October, and after refuelling and spending the night at Burao refuelled at Jijiga and landed on the racecourse at Addis Ababa the following day. Exhibition flights were made by the aircraft during the coronation ceremonies, and the flight, which was well received by the Abyssinian Government, arrived back at Aden without incident on the 10th November.

# EGYPT

EGYPTIAN AIR FORCE.—Tewfik Pasha Rifaat, the Egyptian Minister for War, in collaboration with el Ferik Spinks Pasha, the Inspector-General of the Egyptian Army, has concluded arrangements for the formation of an Egyptian Air Force under British supervision, which at the outset will have five machines. There are at present three Egyptians under tuition in England, and five attached to the R.A.F. at Abu Suwir.

#### INDIA

In order to test the organization for the operation of land aircraft over the Calcutta-Singapore route, a flight from India to Singapore was undertaken during November by one Hinaidi and two Wapiti aircraft of the Royal Air Force in India.

Opportunity was taken during the flight of visiting Siam in return for a visit to India recently undertaken by the Royal Aeronautical Service of that country. The flight, which was accompanied by Sir W. G. H. Salmond, K.C.B., K.C.M.G., D.S.O., the Air Officer Commanding, India, left Delhi on 2nd November and proceeding by way of Allahabad, Calcutta, Dacca, Akyab and Rangoon, arrived at Bangkok on 6th November. In response to an invitation from the Siamese Government the aircraft remained at Bangkok for three days, the visit coinciding with the birthday celebrations of the King of Siam. Congratulatory messages from the Viceroy to the King and from the Government of India to the Government of Siam were delivered by Sir W. G. H. Salmond and the members of the flight were received by the King. After a most successful visit the flight left Bangkok on 11th November, arriving at Singapore via Victoria Point the following day. A Southampton flying boat of No. 205 Squadron met the flight at Dacca with the most recent information regarding the landing grounds on the remainder of the route, and accompanied the flight from Victoria Point to Singapore. The flight, after remaining three days at Singapore, commenced the return journey on 15th November, and after calling at Victoria Point, Rangoon and Calcutta, arrived at Delhi on 21st November.

#### IRAQ

A certain amount of unrest occurred early in September in the Sulaimania area. During a political meeting in Sulaimania town a riot took place. The police were unable to control the rioters and Iraq Army troops were accordingly called out. In order to prevent a concentration of tribesmen in Sulaimania town, demonstrations by aircraft were undertaken daily over the areas of Sulaimania, Halabja, Penjwin and Kirkuk, and warning letters to the chiefs were dropped by the aircraft. The action taken was effective in silencing the opposition and the situation is now quiet.

As a result of the activities of Sheikh Mahmoud in spreading anti-Government propaganda in Southern Kurdistan a column composed of Iraq Army troops left Sulaimania on 29th October for Serao in order to reassure the tribes in that district. A flight of No. 30 (B) Squadron was based at Sulaimania to co-operate with the column. On the morning of the 3rd November, a party of Kurdish followers of Sheikh Mahmoud attacked Penjvin, which was garrisoned by a small force of police, and succeeded in occupying a part of the village. Air action was accordingly taken against the rebels by aircraft of No. 30 (B) Squadron and as a result the rebel picquets withdrew and their positions were occupied the following night by friendly Kurdish tribesmen, who drove the rebels out of Penjvin and relieved the police garrison. Penjvin is now in Government occupation once more. A second Iraq Army column has been formed and is co-operating with the first column against the rebels in the Choarta district. A composite squadron consisting of one flight of No. 55 (B) Squadron and two flights of No. 30 (B) Squadron has also been formed and is working in co-operation with the ground troops. No further air action has been necessary, but air reconnaissances continue to be carried out over the disturbed districts.

# PALESTINE

Consideration has recently been given to the question of the composition of the garrison of Palestine. It has now been decided that, in addition to the present strength of aircraft and armoured cars, a force equivalent to two battalions of infantry should for the present be maintained.

This garrison is to be reviewed annually, and the question of substituting British gendarmerie for the infantry battalions is also to be considered.

# SOMALILAND

In order to assist the Boundary Commission in delimiting the frontier between British Somaliland and Italian Somaliland, arrangements were made for an air survey of the frontier to be undertaken by the Somaliland detachment of No. 8 (B) Squadron, supplemented by personnel of the squadron from Aden. The survey flight established their headquarters at Barran in November, 1929, the intention being to complete the air photography by March, 1930. For various reasons, however, it was not found possible to complete the survey before the bad weather set in. The work was therefore postponed until November, when the photographing of the remaining sixty miles of the frontier was to be completed. The photographic work so far executed has proved of great assistance to the Boundary Commission.

#### SUDAN

An extensive reconnaissance along the Nile and over the swamps in the Southern Sudan was carried out during July by three floatplanes of No. 47 (B) Squadron. In addition to emphasizing the superiority of the floatplanes over landplanes for general use in this area, the flight proved of considerable value in gaining experience regarding the weather conditions during the rainy season and collecting information regarding suitable floatplane bases and anchorages for use in the event of operations being undertaken in this area.

A flight of three Fairey IIIF aircraft of No. 47 (B) Squadron commenced a flight to Nigeria and Gambia on October 19th from Khartum. The flight returned to Khartum on the 25th November, 1930. This is the first occasion on which Service aircraft have visited Gambia.

#### TRANSJORDAN

Trans-frontier raiding between Transjordan and Nejd tribes still persists although the raids are becoming less frequent and their nature less serious. Daily aircraft patrols along the frontier are being maintained, and raiders are dealt with immediately they are observed. This continual activity on the part of the Royal Air Force is proving a great deterrent, and reports indicate that raiding on a large scale has to a great extent been stopped. With the exception of two raids carried out during October by Nejd tribes against the Howeitat in which 700 camels were looted, the raids that have taken place during the period under review would appear, from the number of raiders engaged and the loot taken, to be nothing more serious than petty robberies.

# AVIATION IN FOREIGN COUNTRIES FRANCE

FRENCH AIR ESTIMATES FOR 1931-32.—The French Air Estimates for the year 1931-32 have now been circulated and the credits asked for amount to a total

of 2,262,852,020 francs. This is an increase of approximately 240 million francs on the 1930-31 Budget. Some of the causes for the increase are:—

(a) A general increase in pay and allowances.

(b) The transfer of the Colonial Air Force to the Air Ministry.

(c) Increase in the cost of aircraft due to metal construction, rise in the price of labour, etc.

(d) Re-equipment of Service units.

- (e) Increased expenditure on fuel due to the use of higher powered engines and an increase of flying hours.
- (f) Increased expenditure on the Service Technique, National Meteorological Office, civil aerodromes, and the National School of Aeronautics.
- (g) Increased allotment for the decentralization of the aircraft industry from Paris.

(h) Increased subsidies to civil air lines.

(i) Increased training facilities for reserve pilots.

(j) An increased grant to assist the sale of aircraft in France.

THE FARMAN SCHOOL OF BLIND FLYING, TOUSSUS-LE-NOBLE,—The Farman Blind Flying School continues to give instruction to its full capacity. All civil pilots employed by French Civil Air Lines have now passed through the school. Officers from every regiment in the French Air Force have also passed through the school and more officers of the Air Force continue to attend each course.

#### ITALY

FLIGHT OF TWO SQUADRONS TO SOUTH AMERICA.—Two squadrons of Savoia S.55 flying boats, twelve in number, set out from Italy for Brazil, via the West Coast of Africa, in December, and reached Natal near Pernambuco at 8.30 p.m. on the 6th January. The chief interest of the flight centres in the crossing of the Atlantic which started at daybreak of that date from Bolama in Portuguese Guinea. At 6 p.m. the flying boats were off the Island of Fernando de Noronha. Their speed, under the prevalent favourable conditions had thus been 125 per hour. General Balbo, Italian Minister for Air, was a passenger in one of the machines.

A series of mishaps occurred at the start of the flight at Bolama. For reasons not yet properly explained, but probably due to excessive loading, two machines crashed on taking off. One of these took fire an one of the crew was killed; the other machine, after catching fire, sank with her crew of four. Only ten machines, therefore, arrived in Brazil.

AIR MAIL SERVICE BETWEEN NAPLES AND GIBRALTAR.—An experimental seaplane service operating between Naples and Gibraltar with Italian mail for the United States, commenced during September. The liners of the Lloyd Sabaudo line bound for New York, take the mail on board at Gibraltar.

On the return voyage, the mail for Italy is transferred to the seaplane at Gibraltar. The time taken for mails between America and Italy is stated to be thus appreciably reduced, and it is hoped at a later date to extend the service to passengers.

D'ASCANIO HELICOPTER.—It is reported in the Italian Press that the D'Ascanio helicopter has successfully carried out:—

- (a) A non-stop flight from point of departure and back in 8 min. 45 1/5 secs.
- (b) A non-stop horizontal flight of 1,078.6 metres in 5 min. 12 1/5 secs.
- (c) Has reached an altitude of 18 metres in 1 min. 40 1/5 secs.

## JAPAN

JAPANESE NAVAL AIR SERVICE.—Consideration has been given to an increase of the Naval Air Service consequent on the ratification of the London Naval Treaty, and it is reported by the Japanese Press that a fundamental plan of the air strength, and the resultant alterations of the Naval air forces and their comparison with those of the United States will be as follows:—

- II. Maintenance expenditure of new squadrons to 1936 . £7,000,000 The new squadrons will include types of large flying boats. Airships will also be built.

An increase of aircraft for use on battleships, cruisers, etc., from 70 to 290 is proposed.

If this plan is realized, the effect will be :-

VIII. I STREET TENNEY TOOL O	At	the end	of 1931.		
Japan.			United State	es.	
Ship-borne aircraft		70	Ship-borne aircraft		510
Land-based ,,		270	Land-based ,,		390
			Marine aviation		100
		THE PARTY			-1400
		340			1,000
		_			
	At	the end	of 1936.		
Japan.			United State	ss.	
Ship-borne aircraft		290	Ship-borne aircraft		1,060
Land-based "		460	Land-based ,,		460
			Marine aviation		100
		0 -17			110
		750			1,620

## PORTUGAL

FLIGHT TO PORTUGUESE INDIA.—Two Portuguese military airmen, Captain Manuel Moreira Cardozo and Lieutenant Francisco Ferreira de Moraes Pimentel, left Lisbon early in November in an attempt to fly to Portuguese India via Morocco, Algeria, Tunisia, Tripolitania, Egypt, Palestine, Syria, Iraq, Persia and British India.

The aircraft in which the flight was carried out was a De Havilland "Puss-Moth" with 120 h.p. Gipsy III engine. The airmen successfully completed the flight by landing at Diu, Portuguese India, on the 18th November.

#### SOVIET RUSSIA

Long Distance Flight.—Three single-engined two-seater aircraft of Russian design and construction recently completed a flight from Moscow to Teheran and Kabul and back. The route followed was:—Moscow-Sevastopol-Angora-Tiflis-Teheran-Kabul-Tashkent-Orenburg-Moscow, a total distance of over 6,000 miles. It is claimed that the whole distance was covered without mechanical trouble of any kind. It is not known whether the engines used were of Russian construction or had been purchased abroad.

# AIRSHIP NOTES

# GREAT BRITAIN

"R.101" ENQUIRY.

The enquiry into the loss of "R.IOI" conducted by Sir John Simon. with Lieutenant-Colonel J. T. C. Moore-Brabazon and Professor C. E. Inglis as his assessors resumed sittings on the 3rd December last and concluded taking evidence on the 5th of that month.

Amongst the witnesses called was Dr. Hugo Eckener, who has commanded the "Graf Zeppelin" with such conspicuous success. In the course of his statement he visualized what occurred in the following words :-- "The whole happening was no doubt as follows. At 2 o'clock the new watch came on to take over the control of the elevator. He (the coxswain) would have to feel his way into the static condition of the ship. This is an old experience. The weather was bumpy and the ship probably not only heavy-three or four tons-but a little heavy by the nose owing to the loss of gas in one of the forward gas-bags, in the same gas-bag which later sustained a large rent. It is very difficult at once to feel the head heaviness of the ship, when at the same time, the ship is heavy as a whole because the static and dynamic factors would then compensate one another. It may now have happened that in a slight gust of wind the ship made a movement downwards which the new coxswain at the elevator did not immediately and correctly counteract because he could not be quite clear about the condition of the ship. The movement became steep because the ship now received a current of air from above on to her nose, thus accentuating the effect of the head heaviness. Gas between the gas-bags and the outer cover escaped to the tail part of the ship. thus increasing the pitch movement still further. Owing to this unusually violent movement of the ship the already damaged gas-bag received a large rent from which the gas now quickly escaped, going into the tail. Thus it took some time (perhaps fully 30 seconds) to bring the ship back to a level keel. Probably this was possible only by dropping oil from the control car. The ship having righted herself through the throwing out of ballast was unable to maintain her horizontal position by reason of the fact that the gas continued to escape quickly."

Dr. Eckener went on to say that he thought the "R.ror" would be three to three-and-a-half tons heavy because of rain and because of the loss of gas due to the ship going above pressure height at the start. He assumed that when the ship got back to horizontal by dropping ballast, she lost speed, and also continued to lose gas. As a result the elevators would not do what they could have done before.

### SOVIET RUSSIA

A small airship of 2,500 cubic metres capacity, the "Komsomolskaya Pravda," has been built and flown successfully in Russia. It is of non-rigid type and is

designed to carry six passengers. This airship is stated to be the first of several which are to be built for the transport of passengers and commodities in Northern Siberia.

# UNITED STATES

AIRSHIP POLICY.—As indicated in last quarter's JOURNAL, the loss of the British airship "R.101" has not caused any change in airship policy in the United States. Statements have been made by officials of both the Navy Department and the Bureau of Aeronautics expressing confidence in the practicability of rigid airships, and reiterating the intention to complete both of those authorised for the Navy. One of these is already under construction, and an appropriation of 1,500,000 dollars is recommended in the forthcoming Navy Budget for the commencement of the second airship.

THE "LOS ANGELES."—The Navy Board of Inspection and Survey have completed a thorough examination of the naval airship "Los Angeles" with the object of obtaining data on her present condition and of determining how long she may be retained in active commission.

The report issued by the Board states that the airship has flown approximately 2,500 hours, and, in addition, has spent some 1,200 hours at the mooring mast. It is found that the material condition of the airship is good, and a further life of at least two to four years' active use is predicted. Amongst other recommendations the Board gives its opinion that the greatest care is necessary in frequently exam ning the structure of the airship, and suggests that when the "ZR.3" is taken out of active commission it should be subjected to destructive tests to yield data on devices for mechanical handling, landing and mooring of airships.

The airship is to take part in the fleet exercises in the Panama Canal Zone during the latter part of February. While on this duty she will use the mooring mast on the naval auxiliary ship "Patoka."

Helium Gas.—Commenting on the statement made by the Chief of the United States Navy Bureau of Aeronautics that the present law prohibits the export of helium from the United States, President Hoover has made the following statement: "failure of foreign governments and agencies to take advantage of opportunities afforded them for obtaining supplies of helium in the United States is alone responsible for their dependence on other gases for their lighter-than-air ships. While the law requires that exporters obtain permission from the Government to send supplies out of the country, permits are freely granted."

"Helium in this country has been produced by the Government and by private companies. For the past two years private companies have not only been given liberal permits for the export of every ounce of helium they could sell, but they have been urged to develop a foreign market."

Reports in the United States Press state that the Government plant near Amarillo, Texas, is producing helium in increasing quantities, while the operational costs have been greatly reduced. It is estimated that one of the new 6,500,000 cubic feet airships being built for the navy could now be filled from this plant with a net expenditure of about 50,000 dollars.

#### TRANS-ATLANTIC FLIGHTS

The record of trans-Atlantic flights, given in last quarter's "Airship Notes," was incomplete. The following table is taken from an article in the Quarterly

Review of January last, entitled "R.101 and Afterwards," which analyses the pros and cons of airships, and discusses their future prospects:-

•	STATE COMPA OF METATI	aprey.	COLUMN COMMON CO		- amount - basshesses	
	July, 1919		" R.34 "		East Fortune, N.1	B., to Long Island
	July, 1919		**		Return to Pulham	, Norfolk.
	October, 1924		" Los Ang	eles "	Friedrichshafen to	Lakehurst.
	October, 1928		" Graf Zep	pelin "	,,	99
	October, 1928		**		Return.	
	August, 1929				Friedrichshafen to	Lakehurst.
	August, 1929		.,		Lakehurst to Frie	drichshafen.
	September, 1920	9			, ,	
	May, 1930				Seville to Pernam	buco.
	May, 1930		.,		Lakehurst to Sevi	lle.
	July, 1930		" R.100 "		Cardington to Mor	ntreal.
	August, 1930		**		Return.	

The Pacific has also been flown by the "Graf Zeppelin"-Tokyo to Los Angeles—on her flight round the world in August, 1929.

A comparison of the airships which performed these flights is given in the same article, and is of interest:-

	Cubic Capacity	Length	Diameter	Engines	Crew	Passengers
"R.34"	1,950,000	643 ft.	79 ft.	Five 250 H.P. Sunbeams	22	provide all III
" Los Angeles "	2,470,000	656 ft.	901 ft.	Five 400 H.P. Maybachs	25	20 (or 20 tons bombs)
"Graf Zeppelin"	3,708,000	771 ft.	100 ft.	Five 550 H.P. Maybachs	26	20
" R.100 "	5,000,000	709 ft.	133 ft.	Six 650 H.P. Rolls-Royce	37†	1

<sup>\*</sup> Crossed Atlantic with thirty-two persons on board.
† Five officers and thirty-two men on trans-Atlantic flight.

<sup>†</sup> Accommodation for one hundred passengers was part of the general project when "R.100" and "R.101" were designed. Such a load bas proved quite impracticable, and on the return trans-Atlantic crossing there were fifty-six persons on board, including the crew, in "R.100."

# REVIEWS OF BOOKS

#### NAVAL

Jane's Fighting Ships, 1930. Edited by Oscar Parkes, O.B.E., M.B., Ch.B. (Sampson Low, Marston & Co., Ltd.). £2 2s. od.

Amongst the novelties to be found in the latest "Fighting Ships" are interesting photographs of the re-conditioned Soviet battleship "Parishskaia-Kommuna," with heightened foremost funnel and new overhanging bow, also the miniature Swedish battleship "Gustaf V" with her two funnels now run into one, on the lines of our "Queen Elizabeth" class. Our attention is also called to the new Swedish cruiser-carrier "Gotland," a vessel of 5,260 tons, armed with six 6-inch guns and six 21-inch torpedo tubes, and carrying nine or ten aeroplanes on an open deck right aft, with two catapults; a neat little ship for sheltered waters but hardly "a type which would suit our requirements admirably," as Dr. Parkes

The illustration of the new British cruiser "Exeter" shows a ship of far more pleasing appearance than her immediate predecessor, the "York," or even the very commonplace looking 10,000-ton cruiser. A "general indication" of the new 6-inch cruiser "Leander" is given, but the editor of "Fighting Ships" wisely discards any temptation to publish such purely conjectural—and, incidentally, totally erroneous—details of this Class as have appeared in a certain section of the Press.

While agreeing that the U.S. ro,ooo-ton cruisers of the "Northampton" Class are "fine looking ships"—especially compared with their British contemporaries,—it seems unlikely that they will be repeated. The tendency seems to be towards fewer guns and better protection on both sides of the Atlantic.

Special interest necessarily attaches to new types in the French and Italian navies, in view of the almost feverish activity in new construction displayed by those countries. The annual does full justice to these sections, and emphasizes in striking form the growing challenge, especially as regards large flotilla leaders and submarines, to our naval forces in the Mediterranean.

This work seems a superhuman task for one man, and we can sympathize with Dr. Parkes in the loss of his co-editor, Mr. McMurtrie, while congratulating him on his latest production. That "Jane's Fighting Ships" is a publication of exceptional value to the Navy itself is shown by the fact that the Admiralty include it in a recent and very restricted list of reference books which are to be supplied as a nucleus officers' library in fully-manned destroyers. It has long been a standing volume in the libraries of bigger ships, as it is in most Service establishments on shore.

Brassey's Naval and Shipping Annual, 1931. Edited by Commander C. N. Robinson, R.N. and H. M. Ross. (William Clowes & Sons, Ltd.) 258.

Directly, or indirectly, a great part of the naval section of this year's "Brassey" bears on the London Naval Treaty. If the usual opening chapter on the Naval

Forces of the British Empire makes somewhat depressing reading on account of its record of general "retrenchment," which is merely another name for weakening of our position as a sea Power, the second chapter reviewing the growth of "Foreign Navies" is little short of alarming. A comparative table in the latter showing British cruiser, destroyer and submarine strength in Home and Mediterranean waters and that of the three principal nations whose coasts flank the sea route to our Eastern Empire, is particularly striking. In the light of what these two chapters reveal, especially in regard to the growing navies of Powers who are not bound by the Treaty, and remembering our world-wide commitments, it is not easy to endorse Captain Dewar's views, in his chapter on the Treaty, that our position in the matter of cruisers is "not so very terrible." To those who do not regard the Kellogg Pact as a "sure shield," the position gives rise to grave

apprehension, at the very least.

It is instructive to compare the tone of an article on "American Naval Policy" by an officer in the U.S. Navy with that on "The German Navy" of to-day by a German naval officer. The first is of opinion that the London Naval Treaty "rendered a signal service to the American public" in that, through the medium of the Press "many people remote from the seaboard became acutely aware of their naval deficiencies." Further, "American publicists are alive to the unfortunate results of eight years of naval inaction and are determined that the attitude of laissez faire shall no longer dominate the naval policy of the United States. This writer is undoubtedly voicing a widespread feeling in his country that something more substantial than a "scrap of paper" is still necessary for security to a nation with great possessions. A view equally typical of national opinion is conveyed in a statement in the second article that, by the Treaty of Versailles, Germany is "denied the right to maintain those protective and defensive forces which, according to her own calculations, are necessary for defence and protection." It is evident that foreign sea Powers still regard their navies as a vital form of insurance for the maintenance of peace.

Brassey's Annual, with its admirable reviews of every important aspect of naval affairs and maritime progress, and its wealth of authoritative information on ships and shipping, is as indispensable as ever, and no higher praise can be given to its editors and publishers than to say that the latest volume well maintains

the old traditions.

Bristol Privateers and Ships of War. By Commander J. W. Damer Powell, D.S.C., R.D., R.N.R. (J. W. Arrowsmith). 31s. 6d.

This is, in many ways, a most admirable volume, though it must be admitted that it is hardly one to take up and read solidly at a sitting, unless, of course, one

happens to be a particularly enthusiastic Bristolian.

The first part deals with the ships of war built at Bristol, beginning with the "Islip," launched in March, 1654, and going on to mortar vessel No. 52, launched in July, 1856—the last vessel built at Bristol for the Royal Navy. To each ship is devoted a short paragraph giving the name of her builder, her dimensions, armament, history, and the manner of her end. Commander Powell then deals, in somewhat similar fashion, with hired ships of war serving in the Royal Navy from the port of Bristol, The second part of the book is concerned with private ships of war; particulars are given of the complements, armaments, and so forth of all such Bristol ships as the author has been able to trace, and often he is able to give interesting details of their voyages. Individual chapters are given to such Bristol worthies as Martin Pring, Woodes Rogers and Edward Cooke. It is here

that the author received a clear chance to exercise a narrative style—a chance that he has missed by an excessive reliance on quotation marks. It is true that he excuses his style in the beginning by quoting Captain Thomas James to Charles I, "Vouchsafe to pardon if a seaman's style be like what he most converseth with." But he should have risked it; a greater vitality would have been given to such accounts if the author had relied on his own narrative powers. The third part of the book is concerned with the adventures of certain Bristol merchantmen, beginning, in 1621, with the "Jacob," "which was taken by the Turkish pirates of Algier; and within five days four English youths did valiantly overcome thirteen of the said Turks, and brought the ship to San Lucar in Spain," and ending with the "Hero," which was chased by a submarine off the West Coast of Ireland and was, as the author laconically states, "saved by gun."

Commander Powell is to be congratulated on this book; it is a monument of erudition and, presumably, of patience; it is also well printed and bound, and beautifully illustrated. If others would do for other ports what he has done for Bristol, a fine body of material for the naval historian would be brought into

existence.

Histoire de la Guerre Sous-Marine Allemande (1914-1918). By Capitaine de Frégate A. Laurens. (Société d'Editions Géographiques, Maritimes et Coloniales).

This is a book which will well repay the attention of students of submarine warfare. The author, who is at present Chief of the Historical Section of the French Naval Staff, has naturally had access to official documents, but in a foreword mentions that the opinions stated and conclusions arrived at are his own and not

necessarily those of the Naval Staff.

Commander Laurens has already produced several notable works on submarines and their effect in war, and is well known in France as an authority on this subject. In this book he has very ably divided this large subject into three parts, dealing respectively with the political aspects of submarine warfare, the operations covered by the German submarines during the Great War, both in the North Sea and in the Mediterranean, and finally the problems of the employment of submarines before,

during and after the war.

In the first part he describes the varying opinions in Germany as to the uses of submarines, ranging from the original intention at the outbreak of the war to employ them against warships alone, to the final campaign of ruthless and unrestricted attacks against merchantmen,—not only enemy but neutral—in 1917 and 1918. He describes the German submarine commanders in the early days of the war as complaining that the chances of making targets of enemy warships were incommensurate with the mileage the submarines had to cover, and the sight of merchantmen pouring tempting cargoes into the British Isles soon led them to plead to be allowed to use these as targets. In this connection it is interesting to note that von Tirpitz, later to be the ruthless advocate of unrestricted warfare, is described as demurring on account of the effect it would have on neutrals.

The second part of the book is devoted to accounts of the various attacks carried out by submarines in the North Sea and in the Mediterranean, and is full of interest. As is well known these became more and more disastrous until the introduction of the convoy system, which prevented the complete paralysis of allied shipping.

The final part of the book consists mainly of accounts of the various opinions expressed by the authorities of the different nations at the Peace Conference and

at the Conferences of Washington and London on the vexed question of the employment of submarines. The proposal put forward by Great Britain that submarines should be abolished failed, as is well known, to find favour in France, and in support of the French point of view it is urged that English Admirals are not unanimous on this matter. A characteristic letter from Lord Fisher is quoted; this is said to have been written to von Tirpitz after the latter's debacle in 1916, and in it Fisher states he does not blame von Tirpitz for his ruthless submarine campaign and would have done the same had he been in the same position.

The book is excellently indexed, and contains some extremely good illustrations, together with some silhouettes of the different types of German submarines.

Naval Customs and Traditions. By Rear Admiral Gerard Wells. (Philip Allan & Co.) 8s. 6d. net.

The origins and meanings of many of the customs and traditions of the Royal Navy are to a great number of persons, both within and without the Service, "wropt in mystery." Here, Admiral Wells presents an admirable collection of customs, traditions, sayings, and expressions of the past and present. Alphabetically arranged, they are easy to find, and they solve many knotty points.

In a number of instances interesting historical summaries are given. These, as well as the definitions, are concisely stated and authority is quoted where traceable.

The language of the sea has always contained a great deal of slang peculiar to itself. These expressions serve their turn, change, or die out completely leaving little or no trace of their origin. It is common knowledge that with the disappearance of the masted ship, the speech of seamen has lost much of its technical flavour. Their words and sayings no longer smack of hemp, tar and salt water; our ears are assailed with terms redolent of the factory and cinema. The change was inevitable, but the loss is considerable.

Admiral Wells does good service in preserving and promoting knowledge of a most attractive subject. He does not claim completeness, and hopes his publication will stimulate further research. The illustrations, reproduced from engravings and caricatures in the Macpherson Collection are admirable and aptly chosen.

# Old Sea Wings, Ways and Words. By R. C. Leslie. (Chapman & Hall, Ltd.) 18s, od.

Originally published some forty years ago, now reproduced in facsimile, this beautifully illustrated book is almost a marine classic. In an age when technical accuracy was subordinated to pictorial effect, Leslie accomplished both with brush and pencil much excellent work in recording faithfully subjects of nautical interest.

His own experience of the sea, and his knowledge as yachtsman and boat-builder, enabled him to cover a very wide field in his descriptions of sailing ships and their fittings in the days of oak and hemp. In Leslie's period marine archæology was not greatly studied, consequently in some of his definitions and in his chapter dealing with sea terms he accepted, a little too readily, popular beliefs of origins and derivations. In this edition, Mr. L. G. Carr Laughton furnishes additional notes illustrated by Mr. Morton Nance, and these corrections, studied in conjunction with Leslie's text, are invaluable.

The charm of Leslie's line drawings is undeniable; their merit lies in showing clearly the detail of intricate subjects. Marine students will appreciate this

useful feature, as most contemporary prints and pictures leave a good deal to the imagination.

The Origin of Some Naval Terms and Customs. By Lieutenant-Commander R. G. Lowry, R.N. (Sampson Low, Marston & Co.) 3s. 6d.

This useful little work contains, in concise form, the origin of many naval terms, both in use to-day and already beginning to be forgotten. It also contains brief chapters on naval uniform, pay and punishments. As a book of ready reference for all interested in naval life and traditions it is to be commended.

## MILITARY

Official History of the War: Military Operations, Egypt and Palestine.

Volume II. From June, 1917 to the end of the War. By Captain Cyril
Falls. Maps by Major A. F. Becke. (H.M. Stationery Office). £1.

Maps ros. od.

The second volume of the Official History of the Palestine Campaigns covers the period of General Allenby's command, and records the story of his two campaigns, the first of which resulted in the capture of Jerusalem at the end of 1917, and the second of which, in the autumn of 1918, saw the complete destruction of the Turkish forces in Palestine and Syria, the taking of Damascus and Aleppo, and the end of the war with Turkey. These two campaigns will always be a fruitful field for the gathering of knowledge by the military student; for the British student in particular they are the most profitable source of instruction to be found in the late war, since the fighting was more open and more varied, the administrative problem was more diverse, and the scale of the operations more in proportion to the immediate military resources of the Empire than in the Western theatre or elsewhere.

The volume dealing with these campaigns is a long one, containing nearly 800 pages and over 50 sketch maps, diagrams or illustrations, to which those in the separate volume of maps are additional. For the importance of the subject the volume is not in the least too long, and never appears to be overloaded with detail; it is in fact a remarkable feat of compression. To avoid an inconveniently bulky volume, the narrative has been bound in two parts, the first containing the narrative of the Jerusalem campaign and the early fighting of 1918, and the second part the re-organization of the E.E.F. in the summer of 1918, after the departure of most of the British troops to France, and the final victory in

September and October, 1918.

Space permits little more than a bare catalogue of the very many points in these two campaigns which will interest the seeker after military instruction. He can consider the dangers and difficulties of General Allenby's plan for turning the left flank of the Gaza-Beersheba line—held and strengthened by the Turks for nine months—and how these difficulties were overcome and the Turks deceived as to the real point of attack. He will find the arguments for the alternative plan, of smashing a way through at Gaza, set forth and commented on. He can study the work of the mounted troops during the pursuit up the plain of Philistia, and examine whether the interception and destruction of the Turkish troops retiring from Gaza might have been achieved had the Desert Mounted Corps been able to make a better beginning. He can compare the cavalry charges at Beersheba, Huj, El Mughar, Abu Shushe, and consider the power of rapid movement on the

battlefield to disconcert the enemy and reduce the effect of his fire. He can admire the determination and skill of the troops who struggled up the passes into the hill-country of Judæa, often hungry and footsore, battered by the cold and wet as well as by the fire of the foe, which made possible the capture of Jerusalem. He can examine the passage by surprise of the strongly defended river line of the Auja (north of Jaffa) in December, 1917, and can compare it with other notable examples of forcing a river obstacle. He can criticize the arguments put forward by "Easterners" and "Westerners" respectively as to policy in Palestine, and the decision of the War Cabinet on these arguments. He will appreciate the brilliant audacity of General Allenby's plans for the final overthrow of Turkish arms in Palestine and Syria and the dash and resolution with which they were executed. He can reflect, after reading the dramatic story of General Barrow's doings on the night of September 19th-20th, at the crisis of the passage of the mounted troops through the defiles of the Carmel spur, how much a leader's personality may still count in the field. Finally, throughout the campaigns he will understand how much knowledge, resourcefulness and foresight the administrative problems of an army demand in such a theatre, and how essential is the study of these problems.

The student will find Captain Falls' work quite admirable for his purpose. The narrative is extremely readable and well written; infinite trouble has obviously been taken to secure accuracy, and the arrangement of the material and the general proportions of the work are sound. The appendix at the end of Part I, giving the comparative sizes of the various parts of the theatre of war and of well-known English counties, may be instanced as showing the care and imagination with which the volume has been compiled. The general reader need not fear to find the volume too detailed and too "official." The historical allusions to other events and other campaigns in the long history of Palestine add much to its interest. A bibliography of the literature of the campaigns, which no one is better qualified to compile than Captain Falls, would have been useful. But considerations of space may have forbidden. The only serious fault to find with the volume is its price, which is unfortunately high.

The name of Major A. F. Becke is a sufficient guarantee of the excellence of the maps.

A History of the Peninsular War. By Sir Charles Oman, K.B.E. Vol. VII.

August 1813—April, 1814. (Oxford University Press). 35s. od.

It is not always from his best known or most important achievements that a great commander's methods and qualities can best be studied. At Torres Vedras, Napoleon's armies received their first real check; Eylau, Baylen and Aspern were all quickly retrieved, but, as Sir Charles Oman has well said, "the high water mark of French conquest in Europe was reached" in front of Torres Vedras on the 14th October, 1810, for the retreat that Masséna began a month later was only to end at Toulouse (cf. Vol. III, p. 136). Still Torres Vedras is no more the real clue to Wellington's characteristics as a strategist than are the weary hours of stubborn endurance when he was waiting for the belated Prussians to make good Blücher's promise of assistance. The caricature of Wellington as a preeminently defensive general, unenterprising and over-cautious, will certainly not survive a perusal of this most interesting volume with which Sir Charles Oman has just concluded his invaluable "History of the Peninsular War." If Wellington is to be criticized for any of the operations which it describes it is rather for

rashness, for risking too much, than for lack of enterprise or for letting opportunities escape him.

This volume starts just after Soult's escape behind the Bidassoa in August, 1813, after his failure to retrieve Pampeluna. It embraces therefore, the storming of San Sebastian, the decisive forcing of the lines of the Bidassoa (October, 1813) and Nivelle (December), the investment of Bayonne, and Wellington's final advance inland (February to April, 1814) with his victories at Orthez and Toulouse, for victory Toulouse certainly was (cf. p. 491). It covers also the uneventful close of the East coast operations where Suchet's obstinacy in locking up half his veterans in fortresses of no real strategical value (cf. pp. 71 and 89-90) threw away his chance of striking a really effective blow for Napoleon. Had Suchet evacuated Catalonia and taken 50,000 good troops to Soult's assistance on the Adour as Wellington feared he might, he would have given his fellow Marshal a numerical superiority which might not only have checkmated Wellington, but allowed Soult to reinforce the Emperor in Champagne with veterans of priceless value; and with these Napoleon might have turned the tables on Schwarzenburg and Blücher. For what Sir Charles Oman makes abundantly clear is that the real value of Wellington's last campaign lies largely in the quality of the opponents he was beating. The troops whom he defeated at St. Pierre, despite their advantage in numbers (p. 266); at Orthez, despite their advantage of ground (p. 353); and at Toulouse, despite their entrenched position (p. 492), were the real Grand Army, all veterans and infinitely superior in average quality to anything Napoleon commanded after 1809. The best French troops had been hurried off to Spain after Wagram, and relatively few were withdrawn either for the Moscow campaign or to stiffen the "Marie Louises" in 1813.

Another aspect of Wellington's operations is almost equally important. Even after Soult had in January, 1814, detached 14,000 veterans to reinforce the Emperor, Wellington had no real numerical superiority over him. At Orthez he had only 44,000 to 37,000; at Toulouse 10,000 of the 49,000 he opposed to Soult's 42,000 were Spaniards, troops whom it was dangerous to employ because of their indiscipline and propensity to plunder. It is notable how by maintaining strict discipline, suppressing marauding and paying promptly for supplies, Wellington profited by the apathy, or rather hostility, of the Gascon peasantry towards the Emperor's cause; a feeling which was accentuated by the failure of the veterans of the Army of Spain to forego their plundering habits merely because they were on the French side of the Pyrenees (cf. p. 141). If not actively Royalist in sympathy, Southern France was sick of Napoleon's rule, the conscripts with whom Soult sought to replenish his ranks either melted away at once (p. 291) or, as at Orthez (p. 370) and Toulouse (p. 487), fought most feebly. The peasants preferred the English to the French, and one of Wellington's main troubles was to restrain those who tried to persuade him to declare openly for the Bourbons. Such a proceeding would have been folly until the Allies had committed themselves to the overthrow of Napoleon, and it is clear that it was the uncertainty as to the Allied intentions, military and political, which explains and fully justifies the apparent over-caution of Wellington on more than one occasion at this period. He did not press home his advantage after repulsing Soult in the Pyrenees because he did not know whether Austria had decided to join the Allies; he could not be sure that the Continental Powers would not patch up a peace which would leave Napoleon free to throw himself with every man he had on the Anglo-Portuguese. Wellington might have reached the Garonne before Napoleon had lost the line of the Elbe; he had too wide a vision and too nice a balance between the desirable

and the possibility of over-reaching himself so far as to seize a position he could not make good.

Sir Charles Oman in this last volume has more than sustained the reputation for clear, vivid and vigorous narrative, for unwearying research and for cogent argument which his previous volumes have earned. In one respect, the maps, this volume is an advance on its predecessors, and there is the usual wealth of statistics in the appendices. Students of British military history owe him no small debt for having conceived such an important enterprise and for carrying it out to such a successful conclusion.

The Great War in West Africa. By Brigadier-General E. Howard Gorges, C.B., C.B.E., D.S.O. (Hutchinson). 21s.

Warfare in the swamps and forests of West Africa necessarily differs so greatly from that under the conditions prevailing in the main theatres of the Great War that any authoritative description of it cannot fail to be of interest. The author of the present work, Brigadier-General E. Howard Gorges, was the Colonel commanding the British Contingent of the Anglo-French Expeditionary Force under Major-General C. M. Dobell, and therefore what he says carries the weight of intimate knowledge. He does not, however, claim to have written a detailed history of the operations against Togoland and the Cameroons, but rather to have produced a record of the deeds of arms of our West African soldiers from Sierra Leone, Nigeria, the Gold Coast, and the Gambia, and his pages consist of a well-deserved tribute to all who took part. Though the serious military student must look elsewhere for technical details, he will, nevertheless, find here that local colour—very plentifully illustrated—which so materially helps towards the visualization that is necessary to appreciate properly the difficulties and obstacles that governed the movements and decisions of the commanders.

General Gorges opens his book with a brief survey of peace-time conditions on the "Coast," but very quickly gets into his stride for he reaches the order to mobilize in the first dozen pages. Thereafter, having disposed of the swift conquest of Togoland in one chapter, he settles down to give a clear and colourful account of the campaign in the Cameroons, which, since its conquest was not completed till February, 1916, necessarily occupies the remainder of his space.

An interesting description of the country itself, which possesses features of great beauty in its mountainous district, and of its people, introduces the reader to a region of which little was known generally before 1914. Attractive as this description is, and comparatively moderate as is the country's temperature, the Cameroon coast is one of the most pestilential in the whole continent; there are large inland areas in which neither cattle nor horses can live owing to the tse-tse fly; and sleepy sickness and malignant malaria are enemies that attack even the Africans themselves. To tell how the forces, European and native, overcame these difficulties, plus a tenacious but elusive enemy, is the task set himself by General Gorges, and he has carried it out in such a manner as will commend itself to the interest of all readers, professional or otherwise.

Clearly he narrates the story of the naval activities off the coast; the German preparations at Duala; the surrender of that important place; the capture of Jabassi, Edea, Victoria, and Buea; the operations along the northern railway; the German attack upon the French at Edea; the operations in the north; the first unsuccessful advance and the final drive of converging columns upon Yaunde,

With the fall of which place and the retreat of the German forces into neutral Spanish territory some six weeks later, the campaign came to a triumphant end.

Under the conditions in which this "side-show" was fought it is not surprising that the author finds room for a high tribute to the Medical Services, whose particular difficulties were surmounted with the same brilliant acumen as characterized the success of the combatants.

The operations are illustrated by three good maps and several sketch maps which will be found of considerable assistance to the text, but the usefulness of the index is greatly impaired by the omission of all but personal names. To the military student, the indexing of all place and other geographical names is really essential, and this admirable work certainly merits such an additional asset.

Loyalties: Mesopotamia, 1914-1917. By Sir Arnold Wilson. (Oxford University Press). 25s. od.

Anyone wishing to possess a more comprehensive knowledge of events in Mesopotamia from 1914 to 1917 must study this book. Parallel with the military operations, Sir Arnold Wilson, whose authority on the Middle East is unassailable, traces the growth of the intricate and delicately negotiated civil administration that inevitably followed the destruction of the Turkish régime by our advancing troops. It is with this side of the story that the book will find most of its readers more or less unacquainted, and it therefore fills what until its publication has remained a gap in our information. It throws a bright light upon the extraordinary knowledge and foresight required by our Political Officers, and shows how their difficult task was performed to the discomfiture of our enemies and the lasting fame of the Empire they represented. The scope of the Official History was confined practically to the actual military operations and to such political considerations as affected or were affected by them. "Loyalties" therefore provides an invaluable addition to the official work.

The author has no fear of truth, and with a justly blazing indignation he shatters misconceptions as to the clean fighting qualities of the Turk. Every citizen of the Empire should read his indictment of the Turks for their inhuman treatment of the gallant 12,000 men who fell into their hands on the capitulation of Kut; and with no less fearless pen he details the terrible and costly errors of the campaign, finding glory in little but the enduring and magnificent bravery of all the troops engaged in the biggest undertaking outside France in the history of our armies. These pages make terrible reading, but they must be read properly to appreciate the awful conditions that prevailed in the so-called Garden of Eden.

Not the least useful content of the book is a bibliography occupying sixteen pages, while the four maps selected from the Official History admirably illustrate the operations.

. As indicated, the present volume carries the story only to the end of 1917, and the further volume the author promises, if it maintains the standard of that now before us, will complete one of the most important contributions to the military and political history of our time.

The Rise of General Bonaparte. By Spenser Wilkinson, Fellow of All Souls College, Oxford; sometime Chichele Professor of Military History, (Oxford: University Press). 12s. 6d.

The brilliant campaign of 1796 in Italy has often been described. But never

before do we remember having read an analysis of Bonaparte's early training and its influence on his conduct of the French operations in that year. The success of the young general in April, 1796, almost immediately on taking over his new command, could not be attributed to any stroke of fortune unsupported by a clear and carefully meditated plan. It was indeed the result of deep thought and prolonged study. Professor Wilkinson shows how Bonaparte's early studies and his careful reading of Maillebois' campaign in those same regions in 1744-45 had obviously inspired his strategy of 1796. Then, also, he had meditated over the teachings of one Bourcet, who wrote of mountain warfare with particular reference to this self-same theatre of war. Bonaparte, moreover, was of the south; he knew that type of country. He had served before Toulon in 1792. He was once more sent to the Army of Italy in 1794 as chief of the artillery. In that capacity it was he who had planned the first successful Battle of Dego in that year. Although recalled to Paris he still continued to inspire French strategy with regard to the smouldering campaign along the Italian Riviera. Consequently, when appointed to the command of the Army of Italy in 1796 he was more than familiar with the outlines of the problem.

Professor Wilkinson gives very little detail of the actual campaign beyond tracing Bonaparte's connection therewith; he just outlines the environment which caused him to select the course of action which led to his astonishing success and final entry into Milan on 14th May. The most amazing feature of this five weeks' campaign is the fact that enormous results were achieved with very small effectives, almost without a battle of first magnitude. It was a continual struggle between detachments. The Austrians having chosen to disperse their forces, Bonaparte did the same with the great difference that he always planned this disposal so as to be able to re-unite sufficient men to defeat the enemy's small forces one by one. In that he showed consummate generalship.

We are glad to see two myths exploded in this book. The first is the story that the French Army of Italy was a ragged and starving mob; they were in fact a magnificent body of troops, hardened by privations, it is true, but no mere assembly of brigands and raw recruits. The second myth which goes by the board is the reputed proclamation which is usually ascribed as having been made by Bonaparte to his men on taking over his command. This harangue was the work of his imagination and written in St. Helena.

Indian Cavalry Standards. By Captain H. Bullock, F.R.Hist.S., I.A. (Sifton Præd & Co., Ltd.). 1930. 21s. Limited edition.

Standards are now carried by very few Indian cavalry regiments. Their general use was discontinued in 1864. Such standards as used to be carried might be "squadron" standards, of which every squadron carried one; or they were "honorary" standards given for some distinguished action in war—much as the current bestowal of the fouragère in the French Army. Captain Bullock has, therefore, encountered many difficulties in putting together this collection of standards and can be congratulated on the resulting volume, which is thoroughly well illustrated. This attempt lends some point to the census of regimental colours, etc., now being carried out under the aegis of the R.U.S.I. Unless this task is done soon, there is some risk of traces of many of such colours being totally lost.

## REGIMENTAL HISTORIES

of

W

t

S

5

r

.

S

The Royal Marine Artillery, 1804-1923. By Edward Fraser and L. G. Carr Laughton. 2 volumes. (The Royal United Service Institution). £3 3s. od.

The Royal Marine Artillery was raised in 1804, and from that date until the close of the Great War has taken part not only in almost every action in which the Royal Navy has participated but also in various fighting on land ranging from the Carlist War of 1836 down to the Egyptian campaign of 1882. It is an amazing record of service, and the adaptability of the Corps in overcoming all kinds of natural obstacles and unforeseen difficulties is admirably related in every chapter. Yet the Marine Artillery suffered many discouragements; its establishment and recruiting were constantly being altered. Finally, after 1890 the Marine Artillery was relegated to first-class ships only, and so their versatile role in minor enterprises came to an end. But during the Great War they were once more employed ashore with every type of gun, from A.A. pom-poms up to 15-inch howitzers. This work is a record of service such as only a unit which has fought with both the British Navy and Army could show.

The York and Lancaster Regiment: 1758-1919. By Colonel H. C. Wylly, C.B. 2 volumes. (Privately printed and published) £3 3s. od.

Two thick volumes contain the history of this regiment from its constitution as the 65th Foot in 1758 and the 84th Foot in 1793. The first volume deals with the story of these two battalions from those dates down to the close of the Great War, in which they both took a distinguished part. The 65th, or 1st Battalion, arrived from India in Flanders early in 1915 and later proceeded to Salonika; the 84th, or 2nd Battalion, fought in France throughout the war. The second volume deals with the Territorial and Service battalions on similar lines. Twenty battalions were raised and fourteen of these were heavily engaged in most of the greater battles of the War chiefly in France. There are numerous illustrations and some maps.

The History of the Fifth Battalion The Bedfordshire and Hertfordshire Regiment (T.A.). By Captain F. A. M. Webster. (Fred. Warne & Co., Ltd.).

This history relates the early days of the 3rd V.B. Bedfordshire Regiment. This unit provided two companies for service in South Africa. Later it assumed its present title. During the Great War the regiment first proceeded to Suvla Bay in August, 1915, where it distinguished itself. From 1916 to the end of the War it took a noteworthy part in the Egyptian and Palestine campaign. The volume is well illustrated and provided with maps. The narrative runs smoothly and is not overburdened with detail.

History of The 1st Battalion 5th Mahratta Light Infantry (Jangl Paltan). (Calcutta: Government of India Press).

This is a very brief story of the Mahratta regiment now known by the above title. Raised in 1768 as the 2nd Battalion, Bombay Sepoys, it took a noteworthy part in all Indian campaigns down to the Great War. At this time it was designated the 103rd Mahratta L.I., and fought in the defence of Kut-al-Amarah. Subsequently in 1919-20 it took part in the Waziristan campaign. The volume has no illustrations but some maps.

# AIR

Jane's All the World's Aircraft, 1930. Edited by C. G. Grey. Compiled by Leonard Bridgman. (Sampson Low, Marston & Co., Ltd.). 42s.

Year by year "All the World's Aircraft" continues to grow in size yet it still maintains its policy of treating in the section on aircraft only those machines which are in current use. And it comes as a pleasant surprise to note that under this heading there are this year no fewer than 670 aeroplanes described and illustrated. There are not so many of the line drawings which used to help in elucidating the constructional details of the aircraft; but provided the photographs are well supplemented with performance figures and facts about the designs, they provide all the information that can be expected from a work of this type. The system of dividing the book up into five sections dealing with world developments in civil aviation, service aviation, aeroplanes, engines and airships, has been adhered to and proves an excellent method of setting out the material in a way that is at once clear and concise.

Of particular interest among the British aircraft are the large machines, both sea and land-going, including the Handley Page type 42, which carries forty people in a really comfortable cabin and gives a fuel consumption per passenger of about forty miles to the gallon, and the large flying boats such as the Blackburn Sydney, now fully illustrated for the first time, and the new Short and Saunders-Roe flying boats. The De Havilland 77 Interceptor fighter with the air-cooled H type double-crankshaft engine is illustrated and briefly mentioned, its speed being given as 203 miles an hour at 20,000 ft. The 77 has only 300 horse-power against the 500 or more required by the more conventional types of single-seater fighter having the same order of performance. Among the foreign machines it comes as a surprise to note that the ceiling of the much talked about Dornier DoX is only 1,640 ft. But it is nowhere stated whether manufacturer's calculated or test station figures are being given.

This remains the one reference work which all who seek to keep themselves informed on aeronautical matters must possess.

# Le Danger aérien et l'avenir du pays. By Lieutenant-Colonel Vauthier. (Paris: Berger-Levrault). 25 frs.

Without detracting from its value in any way, it may be said that this volume contains much that has been published regarding the anti-aircraft defence of great towns in many countries. In fact it is remarkable for the variety of the authorities which Lieutenant-Colonel Vauthier adduces, as well as for the thoroughness with which he treats each branch of his theme. Incidentally it is gratifying to note the freedom with which he quotes from lectures and articles dealing with this topic that originated in this JOURNAL. The respect shown by the author to these various utterances is even more pleasing. It proves that in this country we stand no whit behind the Continent as to the amount of careful thought that has been bestowed on the problem. How far we have translated thought into action is another matter.

Vauthier divides his book into three parts. The first deals with the offensive value of aircraft and the weapons which would be employed by hostile aviators in attacking large towns. He treats the gas menace from this source seriously, and sides with those authorities who see in the gas bomb the greatest future menace to modern cities. The matter is soberly argued and well supported by data referring to the Great War. It should be considered with due care.

The second part is devoted to discussing the means of defence available to meet aerial attack. The first chapter is devoted to studying methods of passing information of impending attack. The second deals with aircraft employed in defence. The third chapter is devoted to the study of ground defences. Vauthier is emphatically of opinion that aircraft are needed to combat the bombing attack, but that they need support from the ground. He also foresees that both bombers and defenders will tend to grow larger, faster and more powerfully armed as time goes on. Among the methods of ground defence he examines, among other measures, the value of camouflage, dummy illuminated areas and the extinction of lights. He frequently quotes, in support of his views, Major-General Ashmore's opinions expressed in his lecture given before the R.U.S.I. in 1927.

The third part of the book deals with the measures to be taken in future for the most favourable planning of towns to withstand aerial attack. He even goes so far as to study the shape of modern buildings and evidently approves of the modern tendency of building in height, whilst leaving much open space round isolated blocks. He also considers the construction of roads and other means of transport from the point of view of aerial defence. He even makes allusion to the necessary legislation that is desirable to ensure the modern city from being made proof,

as far as may be possible, against aircraft bombing.

It is indeed a thoughtful book, and one which all who are interested in this whole subject should not fail to read. We may consider that some of the views are rather extreme and that the author is carried away by the force of his own premises and draws exaggerated conclusions; for all that his discussions are based on logical reason. The only factor of doubt which precludes our agreeing with him in toto is whether any State will be able to carry out such attacks unhindered, either owing to retaliatory measures or by reason of other combatant action on the side of the State attacked.

Imperial Air Routes. By Major A. E. W. Salt, M.A. (John Murray). 6s. A book purporting to deal with air communications which has a prologue and an epilogue and which has, lavishly scattered about its pages, quotations both in prose and verse, is regarded by the aeronautical reviewer with suspicion. It suggests yet another of those too facile propagandist pamphlets which set out to popularize aviation and which imagine that they are doing so when they describe the "thrills" it is said to engender and garnish their descriptions with a few exaggerated claims and inaccurate figures. But directly the reader settles down to Major Salt's book he realises that it is far from resembling those unhappy productions. On the contrary, it is a solid and accurate contribution to the subject of Imperial Air Communications and its quotations and other decorative passages do not detract from its value and may indeed help it to catch the ear of a wider public.

The book traces the history of the Imperial Air Routes up to the time it went to press a short time ago. Yet so rapidly is air transport advancing that it is already slightly out of date. The historical part, however, will always remain among the best comprehensive records of this pioneer work. The chapter on the Baghdad Air Mail, for instance, is of particular interest and tells of the ploughing of that line across the desert which the original Royal Air Force mail-carrying aeroplanes were to follow. Now with better navigation facilities the track across the desert may seem superfluous, but in 1921 when the route was first opened, it was of use in aiding the pilots to find their way without mishap. The pioneer England-Australia flights are carefully considered, with the time tables of each one, from that made by Ross and Keith Smith to that made by Hinkler, but not

including the even greater solo flight of Kingsford Smith. Near the end of the book, Major Salt adds a chapter on "Some Uses of Aircraft," which goes into the subject of Air Survey and points out the immense value of this form of survey

especially to the British Empire.

A melancholy interest attaches to the introduction contributed by Sir Sefton Brancker, our late Director of Civil Aviation at the Air Ministry, which must have been written shortly before his death in the Riox. Sir Sefton Brancker here affirms his belief, now widely shared, that the speeds of British mail carrying and passenger carrying aircraft must be increased. On the London-Continental routes the British machines are now the slowest of all. The book may be recommended as a well-documented compendium of past progress in Empire air transport.

Marine Aircraft. By Captain P. H. Sumner. (Crosby Lockwood & Son). 16s. The flying boat is a type of aircraft in which British designers have had notable successes. It is a type which they have, perhaps, done more to develop to its present high pitch of seaworthiness and airworthiness than any others. The modern flying boat is definitely a boat that can fly and not only an aeroplane that can float. It is therefore appropriate that Captain Sumner should deal at some length with the naval architecture of the type and the hydrodynamics of hull design. He devotes the first part of his book to a rapid well illustrated survey of the past history of flying boats and then turns to the actual problems of design. "The remarkable growth in size of the boat seaplane," he says, "has reached a stage where construction calls for the services of both the aeronautical engineer and naval architect," and thereafter he distributes information impartially to both of them.

The book suffers a little from lack of definition in its aim. About half seems to be addressed to the general reader without technical knowledge and about half to the designer. But both general reader and designer will find much that will be of use to them set out clearly and accurately in its pages. The illustrations in particular are copious and good and include something like 150 photographs and diagrams.

In Provincesion, his Poternational day in Confedence in the Confed

(Geneva), Fretenicd by the Publishers,

# Presented by the Politichers Presented by the Politichers THE LIBRARY

## GENERAL.

- IMPERIAL AIR ROUTES. By Major A. E. W. Salt. 6s. 8vo. (John Murray).
- Secret Service. By Sir George Aston. 18s. 8vo. (Faber & Faber, Ltd.).

  Presented by Lieutenant-Colonel H. G. de Watteville.
- The Indian Antiquary. Notes on Piracy in Eastern Waters. By S. C. Hill. 8vo. (British India Press, Bombay). Presented by the Author.
- THE LIFE OF THE DUKE OF MARLBOROUGH. By E. Thomas. 128, 6d. 8vo. (Chapman & Hall, 1915).
- THE RISE OF GENERAL BONAPARTE. By Spenser Wilkinson. 12s. 6d. 8vo. (Oxford University Press). Presented by the Publishers.
- TURNING POINTS IN HISTORY. By The Right Hon, the Earl of Birkenhead. 21s. 8vo. (Hutchinson & Co.).
- UNIFORMS OF THE WORLD. By F. G. Blakeshee. 8vo. (E. P. Dutton & Co., New York). Presented by Lieutenant-Colonel Sir Arthur Leetham, K.C.V.O., C.M.G., F.S.A.
- Select Documents illustrating the Four Voyages of Columbus. Vol. 1. Edited by Cecil Jane. 8vo. (Hakluyt Society).
- DIZIONARIO MILITARE—TEDESCO-ITALIANO. By Generale Roberto Segre. Lire 100. 8vo. Istituto Poligrafio Della Stato Roma. Presented by the Author.
- THE FOURTH SEAL. By Sir Samuel Hoare. 15s. 8vo. (Heinemann, Ltd.).
- New Wars: New Weapons. By Lieutenant-Commander The Hon. J. M. Kenworthy. 3s. 6d. 8vo. (Elkin, Mathews & Marrot).
- A SOLDIER'S NOTE BOOK. 1914-1918. By General A. A. Brussilov. 18s. 8vo. (Macmillan & Co.). Presented by the Publishers.
- EARLY DAYS IN WESTERN AUSTRALIA. Being the Letters and Journal of Lieutenant H. W. Bunbury, 21st Fusiliers. Edited by Lieutenant-Colonel W. St. P. Bunbury and W. P. Morrell. 7s. 6d. 8vo. (Oxford University Press). Presented by the Publishers.
- LOYALTIES. MESOPOTAMIA. 1914-1917. By Lieutenant-Colonel Sir Arnold T-Wilson. 25s. 8vo. (Oxford University Press). Presented by the Publishers.
- A HISTORY OF THE VIKINGS. By T. D. Kendrick. 18s. 8vo. (Methuen & Co.).
- British Policy and Canada, 1774-1791. By G. S. Graham. 108, 6d. 8vo. (Longmans, Green & Co.). Presented by the Publishers.
- NEW IMPERIAL IDEALS. By R. Stokes. 10S. 6d. 8vo. (John Murray).
- My EARLY LIFE. By the Right Hon. Winston Churchill. 218. 8vo. (Thornton Butterworth).

- La Protection des Populations Civiles contre les Bombardements. Published by le Comite International de la Croix-Rouge. Fr. 10, 8vo. (Geneva). Presented by the Publishers.
- A MIRROR OF ENGLISH. By B. L. K. Henderson. 8vo. (Macdonald & Evans)
- THE LAW OF MARTIAL RULE, By C. Fairman. 8vo. (Callaghan & Co., Chicago). Presented by the Publishers.

### NAVAL.

ADDITIONS TO THE LIERARY

- NAVAL CUSTOMS AND TRADITIONS. By Rear-Admiral G. Wells. 8s. 6d. 8vo. (Philip Allan & Co.). Presented by the Publishers.
- JANE'S FIGHTING SHIPS. 1930. Edited by Oscar Parkes. 42s. Fo. (Sampson Low, Marston & Co.). Presented by the Publishers.
- Bristol Privateers and Ships of War. By Commander J. W. Damer Powell, D.S.C., R.D., R.N.R. 31s. 8vo. (J. W. Arrowsmith, Ltd., Bristol). Presented by the Publishers,
- THE MASTERY OF THE SEA. By Colonel C. Field. 3s. 6d. 8vo. (Blackie & Sons). Presented by the Publishers.
- OLD SEA WINGS, WAYS AND WORDS, By R. C. Leslie. 18s. 8vo. (Chapman & Hall). Presented by the Publishers,

# O.V.O.H. BOTAL INSTALL MILITARY

- A HISTORY OF THE PENINSULA WAR. Vol. VII. By Charles Oman, K.B.E. 35s. 8vo. (Oxford University Press). Presented by the Publishers.
- HISTORY OF THE GREAT WAR. Military Operations in Egypt and Palestine from June, 1917, to the end of the War. Parts I & II and Maps. Compiled by Captain C. Falls. 30s. 8vo. (H.M. Stationery Office). Presented by the Publishers.
- THE ADVANCE FROM MONS, 1914. By Walter Bloem. Translated from the German by G. C. Wynne. 7s. 6d. 8vo. (Peter Davies, Ltd.).
- A STUDY OF THE STRATEGY AND TACTICS OF THE MESOPOTAMIA CAMPAIGN, 1914-1918. 5s. 8vo. (Isaac Pitman & Sons). Presented by the Publishers.
- Jeb Stuart. By Captain J. W. Thomason, Junr. 15s. 8vo. (Charles Scribner & Sons, London). Presented by the Publishers.
- Bedford Forrest. The Confederacy's Greatest Cavalryman. By Captain E. Sheppard. 16s. 8vo. (H. F. & G. Witherby). Presented by the Publishers).
- Indian Cavalry Standards. By Captain H. Bullock. 21s. 8vo. (Sifton, Praed & Co.). Presented by the Publishers.

# REGIMENTAL HISTORIES

HISTORY OF THE 1ST BATTALION 5TH MAHRATTA LIGHT INFANTRY. 8vo (Government of India Press, Calcutta). Presented by the Officers, 5th Mahratta Light Infantry.

- THE ROYAL ARMY SERVICE CORPS. Vol. I. By The Hon. Sir John Fortescue. 8vo. (University Press, Cambridge).
- THE HISTORY OF THE 5TH BATTALION BEDFORDSHIRE AND HERTFORDSHIRE REGIMENT (T.A.). By Captain F. A. M. Webster. 8vo. (F. Warne & Co.). Presented by the War History Committee.
- THE ROYAL MARINE ARTILLERY, 1804-1923. By Edward Fraser and L. G. Carr-Laughton. 2 Vols. 63s. 8vo. (Royal United Service Institution, Whitehall). Presented by the R.M.A. Committee.
- THE YORK AND LANCASTER REGIMENT (1758-1919). 2 Vols. By Colonel H. C. Wylly, C.B. 63s. 8vo. Presented by the Regimental History Committee.
- HISTORY OF THE NORTHAMPTONSHIRE AND RUTLAND MILITIA. By Major C. A. Markham. 8vo. (Reeves & Turner). Presented by the Author.

## AIR

- MARINE AIRCRAFT. Elementary Naval Architecture. By Captain P. H. Sumner. 16s. 8vo. (Crosby, Lockwood & Son). Presented by the Publishers.
- Jane's All the World's Aircraft. Edited by C. G. Grey. 42s. Fo. (Sampson Low, Marston & Co.). Presented by the Publishers.
- FLYING. By C. Graham-White. 12s. 6d. 8vo. (Chatto & Windus).
- LE DANGER AERIEN ET L'AVENIR DU PAYS. By Lieutenant-Colonel Vauthier. Frs. 25. 8vo. (Berger-Leorault, Paris). Presented by the Author.

1 -+ 11{-q7/-m = -11-713 The term of the state of the st

LONDON.

J. J. KELIHER & CO., LTD.,

MARSHALSRA PRESS. SOUTHWARK, S.E.I.

# THE SOCIETY FOR NAUTICAL RESEARCH

(FOUNDED IN 1910).

Patron:

H.R.H. PRINCE GEORGE, K.G., G.C.V.O

President :

Admiral of the Fleet EARL BEATTY, P.C., G.C.B., O.M., G.C.V.O., D.S.O., D.C.L.(Oxon.), LL.D.

# THE OBJECTS OF THE SOCIETY:

(1) To encourage the study of nautical and naval antiquities; including

the dress and equipment of seamen in all ages and races, and the build of ships, both men-of-war and merchantmen.

(2) To compile a reliable Sea Dictionary or Sailor's Word-Book, and, with that end in view, to collect information which will explain obscure words and phrases, together with the customs, usages and folk-lore that gave rise to them

(3) To pave the way to the establishment of a National Maritime Museum, such as those which already exist in countries less renowned than

Britain for connection with the sea.

The Society has raised £100,000 to save Nelson's Flagship and has undertaken to restore H.M.S. Victory to the exact appearance which she wore at Trafalgar.

The Society issues once a quarter an illustrated journal of one hundred pages devoted to the study of nautical archeology in all its branches.

The subscription of One Guinea entitles all who join the Society to one copy of all its Reports and quarterly journals.

For particulars of membership apply to the Honorary Secretary,

PROFESSOR GEOFFREY CALLENDER, F.S.A.,

R.N. College, Greenwich.

R.N. College, Greenwich.

SLOANE 3456

# Cars for special occasions

Superb 6-seater Daimlers with liveried chauffeurs always available.



SLOANE 3456

# WANTED-War Medals

(except late War)

to purchase by a collector

Apply General CUNLIFFE-OWEN, C.B., C.M.G., Doria, ASCAIN, B.P., France.



Hydropathic Establishment MATLOCK

Established 1853. Without superior for Comfort Pleasure and Health-Restoring Equipment. 'Phone: Matlock 17. 'Grams: Smedleys, Matlock WRITE FOR ILLUSTRATED PROSPECTUS

FOR LATEST BOOKS ON THE

TRAINING OF HORSES POLO PONIES DANGEROUS HORSES, Etc., Etc.

Write for Syllabus:—
GALE & POLDEN, LTD:
2, Amen Corner, London, E.C.4



# REMEMBER Two Steeples No.83

quality when you want a good pair of socks.

FROM ALL HOSIERS

# ROYAL HOTEL

WINCHESTER

Leading Family Hotel. Central but quiet. Overlooking own large attractive Garden. Central Heating. Telephone 31.

# "THE MARINER'S MIRROR."

The Quarterly Journal of the SOCIETY OF NAUTICAL RESEARCH.

CAMBRIDGE UNIVERSITY PRESS Fetter Lane, London, E.C. 4

# Land's End-Sennen Cove

Telephone: Sennen 5

A quiet and thoroughly comfortable Private Hotel. Magnifrom the aview, beautiful sand, safe bathing, large lounge (70 ft.), also dining room (70 ft.) splendid fishing, lovely walks, perfect table supply excellent cuisine, farm produce. From 3 Guineas, Special Winter Terms.

R.A.C. Lock-up Garages

(

Under entirely new management. Mrs. A. C. BLAMPIED, Resident Proprietress (Late of St. Helier Hotel, Jersey)

# BOOKS Hugh Rees Ltd.

MILITARY AND NAVAL BOOKSELLERS, STATIONERS AND PUBLISHERS.

5 & 7, REGENT STREET, S.W.1

New Publication.

Notes on Appreciations, Instructions, Operation Orders, and Message Writing, by Major O. G. Body, with 2 Ordnance Maps. Price 8/6, Postage 6d.

Cast Bronze · Repoussé -Metal Carved & Engraved Brass Marble Stone & Wood

J.WIPPELL&@L™

EXETER . . High St & Cathedral Xard LONDON . 11. Tufton St Westminster S.W.I MANCHESTER · · 32 Victoria Street

# MY-SKETCHBOOK IN THE SHINY

"SNAFFLES"

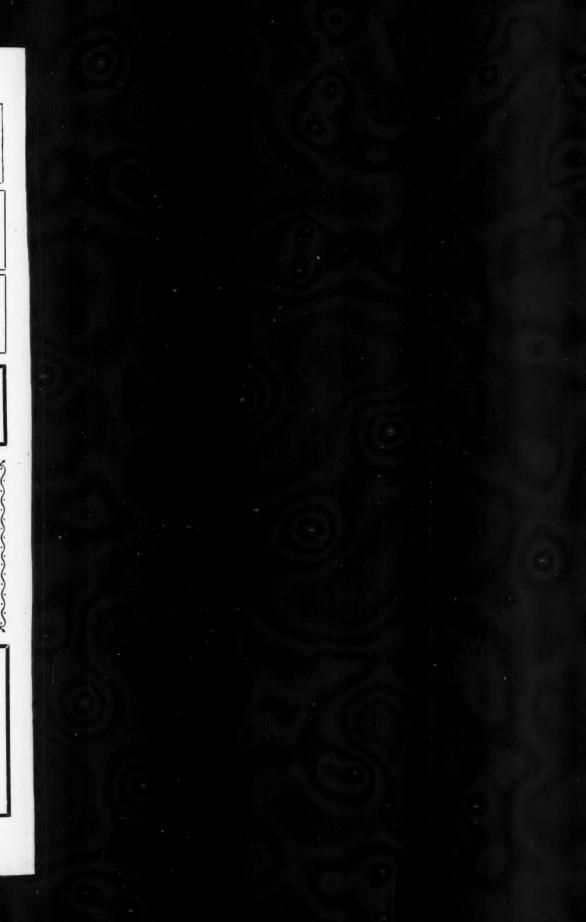
PRICE 21/- NET.

Postage & Packing: United Kingdom, 1/-; Abroad (regd.) 1/7.

"The Sketches, drawn by one who has shared our sport, who has seen as see and has 'so wonderful a talent for recording his impressions, will now provide us with a lasting reminder of that horse-lovers paradise wherein we have spent many of the happiest days of our lives."

Size 12½ × 9½, 104 pages with 30 plates, numerous vignettes and thumbnail sketches. Bound art canvas, heavy boards.

GALE & POLDEN, LTD., 2, AMEN CORNER, LONDON, E.C.4





### ROYAL SCHOOL

# FOR DAUGHTERS OF OFFICERS OF THE ARMY

LANDSDOWN, BATH

INSTITUTED A.D. 1864.

PATRONS: HIS MAJESTY THE KING. HER MAJESTY THE QUEEN.

President:
FIELD-MARSHAL H.R.H. THE DUKE OF
CONNAUGHT. K.G., &c.

SIR J. A. MULLENS, Kr.
COL. A. G. CHURCHLL, C.B., C.B.E.
BRIG.-GEN. SIR R. C. A. B. BEWICKE COPLEY,
K.B.E., C.B.

Col. A. G. CHURCHILL, C.B., C.B.E. Vice-Chairman: MAJOR E. K. RIDLEY.

#### EXTRACTS FROM RULES, ETC.

EXTRACTS FROM RULES, ETC.

The Daughters of Officers who are serving, or who have served. In His Majesty's Army, or in the Royal Marines, are eligible for admission, at rates of £20 and £90 to £150 per annum: paying according to the circumstances of the parents. To see paying £20 per annum (one-third of the School) are admitted by the Votes of Subscribers only—the remainder by the Committee. The age for admission is from 10 to 15 years.

Each contributor of £5 5s. is entitled to one life vote, and each annual subscriber to one vote at two elections for each 10s. 6d. subscribed. Further information can be obtained of the Secretary, MISS N. M. BAYLY, at the Office, Panton House, 25, Haymarket, S.W.1.

# LEGACIES

constitute investments in the name of humanity yielding a high annual return in service to men and women of all grades

£500,000 a year is required for maintenance of over 16,223 centres of work

## **FUNDS**

may be earmarked for any Branch, such as General Evangelical Work, Child Welfare Work, Homes for Boys and Girls in difficult circumstances, Medical and Educational Work in Eastern Countries, Rescue Work, Missionary Work, Work amongst Lepers.

## HELP BY LEGACY IS EARNESTLY SOLICITED

Legacy Forms, etc., on application. Contributions or enquiries to 101, Queen Victoria Street, E.C.4

# NOW READY.



# THE CAVALRY JRNAI

Pullished under the authority of the Army Council, under the direction of Field-Marshal the Viscount ALI ENBY.
G.C.B.; etc. (Colonel Life Guards and 10th/5th Lancers), assisted by Livut.-General Lord BADEN-POWELL, G.C.B., G.C.V.O., etc., Colonel 15th/18th Hussars), Lieut.-General Sir P. W. CHET WODE, Bt., K.C.B., K.C.M.G., D.S.O., Colonel A. E. W. HARMAN, C.B., D.S.O., A.D.C. Lieut.-Colonel Sir A. LEETHAM, Knt., K.C.V.O., etc., and Major-General T. T. PITMAN, C.B., C.M.G. (Managing Editor).

# PUBLISHED QUARTERLY. Price 5s. net.

# No. 79, JANUARY 1931

## CONTENTS.

CONTENTS.

Colonel James Hugonin (Frontispiece),
Notes on the Frontispiece.
The Literature of a Light Cavalry
Regiment—The Fourth Queen's
Own Hussars.
Signals and the Cavalry.
A Nightcap.
"Lake and Victory." The Battle of
Delhi, 1803.
The Cavalryman of Romance. Brigadier Gerard in Real Life. Part III.
The Late Brigadier Malise Graham,
D.S.O.
"Gumbas." An Unpublished Epic.
Some Cavalry Standards and Guidons.
The Cape Mounted Riffemen,
1838-1870. Part I.
Army Derivations.
B.G. Legendaries: "Brian Cheerful."
Napoleonic Cavalry and its Leaders.
Part IV.
A Man Hunt.
Battle Honours of the Indian Cavalry.
American Hunting and English Standards.
The Earth Stopper: Extracts from

dards.
The Earth Stopper: Extracts from
His Doggerel.
Obituary Notice.

Correspondence Notes.
Regimental Items of Interest.
Home and Dominion Magazines.
Foreign Magazines.
Recent Publications.
Sporting News.

All SUBSCRIPTIONS should be sent to, and all copies obtained direct from,

The Royal United Service Institution, Whitehall, London, S.W.1

# BERLITZ

The teaching of Modern Languages in the Berlitz Schools is superior to any other:

- BECAUSE the conception of the Method is progressive and logical.
- 2.—BECAUSE each teacher teaches only his mothertongue and before being allowed to teach, is obliged to complete a special instructional course in the Berlitz Method.
- 3.—BECAUSE the teaching which is oral and is given in the form of conversation inculcates the grammatical rules instinctively as it were and without any effort on the part of the pupil, instead of imposing upon him a course of dry and discouraging study.
- 4.—BECAUSE the pupils having a frequent change of teacher, do not get accustomed to any one way of speaking, neither do they hear only the same pronunciation, but are enabled to understand everybody. This is absolutely necessary to avoid difficulties when travelling in foreign countries.

PRIVATE LESSONS AND SMALL CLASSES

# **NEW COURSES BEGINNING EVERY MONTH**

WRITE FOR BOOKLET "D 22" OR CALL

# **ENROL IMMEDIATELY**

LONDON | 321 OXFORD STREET, W.1 (Head Office) | 3 Harrington Road (S. Kensington) |

BIRMINGHAM: 32 Paradise Street. MANCHESTER: 126 Pertiand Street. LIVERPOOL: May Buildings, 51 North John Street. 8 Bucklersbury, Queen Victoria St. (City) 2 Queen's Road (Bayswater)

SHEFFIELD: 44 Fargate. BRADFODD: Central Chambers, Market Street. EMINBURGH: 75 Princes Street. GUASGOW: 206 Sauchichall Street.

# LANGUAGES

THE BERLITZ SCHOOLS OF LANGUAGES, LTD.

